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ABSTRACT

This bibliographic essay discusses peace research. There are four major sections. The first section discusses traditional peace research, i.e., research with relevance to world peace that was carried out before the term "peace research" became widely used. Emphasized are the disciplines of international relations, international organizations, and international law; the ethics of war and peace; the history and geography of war and peace periods; the economics of war, peace, and development; and the psychology, sociology, and anthropology of conflict, violence, and nonviolence. The second section examines quantitative-behavioral peace research, subdivided into themes such as the arms race theory, games and simulation, events, data analysis, crisis research, predictions of war, determination of war, the behavior of nations at the United Nations, and attitude studies. The third section deals with critical or radical peace research. The concluding section discusses peace proposals where emphasis is on policy implementation, e.g., disarmament, alternative international security systems, and world government. A listing of all research discussed in the essay concludes the publication. (RM)

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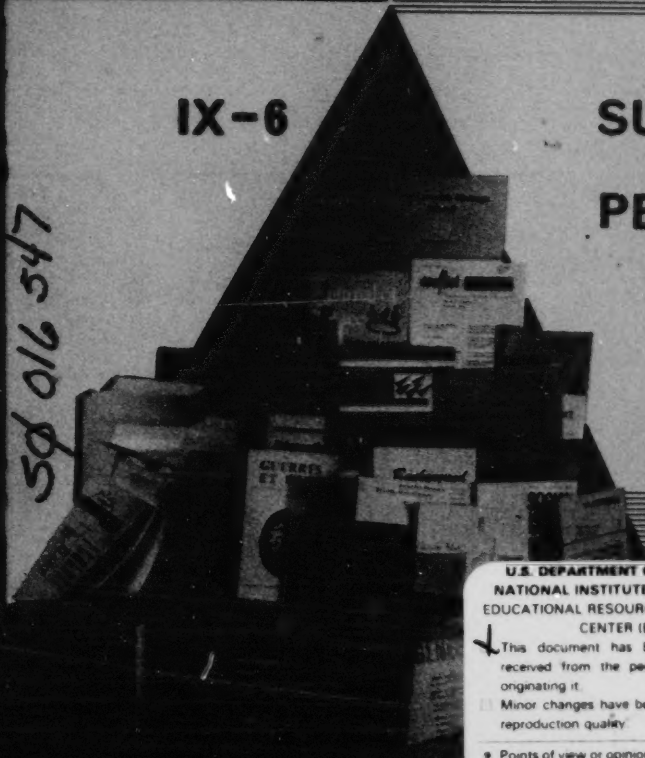

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SURVEY OF PEACE RESEARCH

HANNA NEWCOMBE

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SURVEY OF PEACE RESEARCH

by Hanna Newcombe

Introduction

It is, of course, quite impossible to survey a complex subject, drawing on the knowledge coming from many disciplines, and developing for over two decades at least, with the collaboration of about 1,000 internationally known scholars, in a brief article. Books have been written on the subject (e.g. Jürgen Dedring, 1976; Alan and Hanna Newcombe, 1969), and even they do not do justice to a rapidly expanding field.

To do this in a brief space, one has to either explore a few topics in some depth, or to be comprehensive but very superficial. I have chosen the latter approach, because otherwise my slection of topics might not correspond to someone's priorities. With this article as a quick orientation guide, it would then be possible for the serious reader to examine the references given, to obtain more detailed information.

Of course, some selection was still necessary (and really quite considerable). My biases were: 1. Mention topics which have had the greatest influence on subsequent research and writing in the field. 2. Emphasize research with some (at least implied) policy relevance. 3. Sample various disciplines and approaches (e.g. political science and psychology; traditional, behavioural, and critical currents of thought).

Classification

Many classification systems could be used. In the past I have used two: The subject index of Peace Research Abstracts Journal (which I edit), and the scheme in "Peace Research Around the World" (A. and H. Newcombe, 1969). I have chosen a much simpler one here. The main division is into (1) traditional

Note: This paper, in modified form, was presented at the Conference on "Realism and Idealism in Canadian Foreign Policy", sponsored by the Programme of Strategic Studies at York University in Toronto in November 1983. A shorter version will be published in conference proceedings.

(divided by disciplines), (2) behavioural-quantitative (subdivided by themes), (3) critical (touching on a few key concepts), (4) proposals (where emphasis is on policy implementation).

(1) Traditional Peace Research

What is included under this heading is research with relevance to world peace which was or could have been carried out before the term "peace research" became widely used, in the late 1950s and early 1960s. In general, such scholarly studies were not yet inter-disciplinary, and therefore we group them below by disciplines. They were largely non-quantitative, more in the historical, philosophical, or legal tradition than in the mathematical or scientific one. The normative orientation toward peace was sometimes present, but not always; and nationalism often prevailed over internationalism or globalism in the ideological orientation.

The 1960 date boundary is by no means rigid. Some quantitative peace research predated this, especially the pioneering studies of Lewis F. Richardson (1960; published long after they were written) and Quincy Wright (1940). Likewise, of course, traditional peace research did not cease in 1960. In fact, more studies cited here post-date 1960.

If peace research is defined, following Boulding (1966), as the inter-section between international relations and conflict/conflict resolution theory, we see immediately that this involves the disciplines of political science, international law, psychology, and sociology. It is equally obvious that history, economics, and ethics are also involved.

(a) International Relations

In I.R., the international system is described as it is, with only occasional prescriptive footnotes or afterthoughts. The predominant model is therefore that of "realism" (cf. e.g. Hans Morgenthau, 1960), with its emphasis on "national power" and "national interest" as the main currency of inter-nation exchange. Many exchanges go on which are non-conflictual, even cooperative (like trade or scientific exchanges); in fact, these form the functionalist "backbone" of transactions which form the densely-filled-in background to set off the rarer, more spectacular conflict events. However, the transactions of

daily life are usually relegated to economics or "low politics", and the rarer events in which "threat" plays a greater part than "exchange" * become the focus of attention, or "high politics".

If we take peace research (even that of the traditional type) to have a normative orientation toward peace, then candidates for early peace research from the I.R. field would be the functionalist writings, neo-functionalism and integration theories. The authors in this sub-field do not concentrate on power and the balance of power; on the use or threat of force in international relations; or on the international wars that occasionally but dramatically punctuate the interactions among nations; but rather on the cooperative parts of the system. As is so often true, the "figure" stands out more than the "ground" in people's attention; and so historians and foreign affairs commentators write a lot about wars and the rumours of wars and little about the common cement that already holds the world together (albeit still often in unequal and unjust terms). If we list, as a mental exercise, all possible pairs of nations from the list of 160 nations, we would find that most pairs by far have been peacful; non-interactive perhaps (because of the combination of distance and low resources in many cases), but not conflictful. As we shall see later, conflict tends to be concentrated in certain parts of the world, along "political earthquake zones", which can be thought of as analogous to the "faults" in the earth's crust that geologists talk about.

From the field of International Relations, our candidates for inclusion in early or traditional peace research thus are the integration and neo-functionalist theorists. Among them, the following examples could be mentioned:

Amitai Etzioni (1965), who emphasizes depolarization as conducive to peace; and elsewhere (1962a, 1962b, 1963) discusses political unification at the supranational level;

* K. Boulding (1969) divides all social interaction systems into: the threat system (e.g. war, conflict, power, domination/submission), the exchange system (e.g. trade for mutual advantage), and integrative system (providing services for each other in a community lined by bonds of family or friendship, without regard to own advantage).

Karl W. Deutsch (1954, 1961) who coined the concept of the "security community";
Ernest B. Haas (1961) who tried to apply the EEC model to possible world unification;
Robert C. Angell (1965a, 1965b) who stressed transnational participation by INGOs *; Paul Smoker (1965), with his fascinating characterization of the international system as having a "strain component" (the inter-governmental threat system) and a "strength component" (the people-to-people cooperative contacts), and how war or peace outcomes may depend critically on the balance between these two components. The original functionalist classic is, of course, the book by David Mitrany (new edition 1966).

(b) International Organizations

Related to international relations is the sub-specialty dealing with international organizations. Since the purpose of at least the universal international organizations, like the United Nations, is to "save succeeding generations from the scourge of war" (in the words of the Preamble to the U.N. Charter), study of the U.N. and its organs and agencies is certainly a part of peace research. Many of these studies have been "traditional" in nature, in our sense of the term, although some others have been quantitative-behavioural. For samples of both kinds of studies, one can turn to any issue of International Organization and sometimes other journals, as well as books by Inis Claude (1959), M.V. Naidu (1974), and many others. Studies of the functioning of the U.N. in terms of influence patterns have been done by Robert Keohane (1966, 1967), implementation of U.N. resolutions by Catherine Manno (1966), Gabrielle Lande (1966) and others.

There are also numerous studies of regional international organizations. Some of these are economic in nature (like EEC), and their study is relevant to peace in the light of functionalist theories. Some others are military (like NATO and WTO), and then, some would argue that they incline nations to war, while others would argue the opposite. (Some empirical evidence will be presented later). Some have mixed functions (OAS, OAU). Some are compatible with the U.N. system in their basic characteristics, some are incompatible, at least in spirit. (Cf. Minerva Etzioni, 1970).

Studies of international organizations are also useful in another sense: they steer our image of the international system away from the purely state-centred view, which has proved to be so war-prone. IOs may be good or bad or mixed, but at least they introduce some additional actors into the system, along with INGOs, MNCs, and others. Depolarization may result from the perceptual chaos, if nothing else. The presence of IOs may further loosen the loose bi-polar system under which we live (cf. Morton Kaplan, 1957/64), sharing this leavening effect with the neutral and non-aligned nations. It is assumed here that a bipolar system becomes less war-prone as it gets looser; an assumption that might be questioned - but I base this view on the argument that polarization is one of the factors which predisposes the system to war (cf. Beer, 1981).

(c) International Law

Also closely related to the two sections above is the whole subject of international law. This ancient discipline is obviously peace-related, and still requires much further elaboration by peace research. Nation-states (besides international organizatations the only "subjects" of international law) are under obligations stemming from treaties they have made, from certain precedents, and from the U.N. Charter and certain other legally binding U.N. documents (like the Covenants on Human Rights, the Genocide Convention, etc.). International law is still quite sketchy, but more is being built up. The modern parts of international law include the new Law of the Sea Treaty (though still not accepted by some very important nations), outer space law, and a series of multilateral and bilateral arms control treaties.

Some problems need to be resolved, since international law principles sometimes clash. One example is the rule "Pacta sunt servanda" (treaties must be obeyed) and the rule "Rebus hic stantibus" (if circumstances remain the same); the latter rule opens up a large loophole of exceptions to the observance of the first rule. There have been semi-successful attempts to clarify this ambiguity. Another example is the U.N. Charter's prohibition against the use or threat of force by member-states (which seems clear enough), except in self-defence (which opens up a small loophole), which may include collective self-defence (which widens the loophole almost to infinity, since it seems to

sanction military alliances).

Some experts now say (e.g. Knottenbelt 1983) that Article 9 of the Japanese Constitution, which renounces that country's right to wage war (i.e. even in self-defence), in combination with the decision of the Military Tribunal for the Far East of the War Crimes trials, which generalized the surrender of the right to wage war to all nations, mean that the waging of war is now illegal by international law, as the old Briand-Kellogg Pact of the inter-war years had also proclaimed. If that is so, there are hundreds of law violators out there (150 wars since 1945). However, as Knottenbelt also points out, the A9 - MTFE combination has been hushed up and concealed. In addition, as always, the difficulty is that international law, in any case, has no enforcement powers to obtain compliance.

It could nevertheless be true that preparation for nuclear war is against existing international law. It has been argued (e.g. by Burns Weston, 1983) that preparations for aggressive nuclear war (i.e. "first strike") are certainly illegal, since "planning aggressive war" is illegal in general by the decisions of the 1945 War Crimes trials. But even other uses of nuclear weapons are probably illegal by the rules of "Ius in Bello", or Humanitarian Law of War, which prohibits the harming of civilians, as well as inflicting unnecessary and excessive damage. Whether preparation for this is also illegal, or only actual use, is still a moot point. Some peace groups are now preparing to test this in courts, some of them newly created unofficial courts.

Quincy Wright (see refs. below) has written a series of articles about certain international crises in the light of international law. For the U-2 incident of 1960, (Wright 1960), the Goa crisis (Wright 1962), the Cuban missile crisis (Wright 1963), the Berlin crisis (Wright 1961), and the Bay of Pigs (Wright 1961), he provides a legal analysis of which party violated which international law to what extent. It would certainly be useful if peace researchers trained in international law would provide such detailed legal analyses of all the crises and minor wars of recent times. Such an extended exercise in "comparative crisology" might help legal scholars develop a case law to apply in international crises. If ever the International Court of Justice or a future reformed court of that nature were to

become more involved in adjudicating cases of international disputes, such a build-up of case law would prove useful.

The International Court of Justice is only for nation-states and international organizations. There have been proposals to add to this an International Criminal Court for trying individual offenders against international law. This would have applications in war crimes, in cases of pollution at sea, acid rain, etc. Corporations as well as individuals might be liable for offenses. Rosalie Bertell (1983) recently testified at the Nurnberg Tribunal organized by the Green Party of the Federal Republic of Germany, on "early war crimes of World War III", mainly concerning radiation damage to Pacific Islanders from U.S. and French nuclear tests in the atmosphere or under water.

(d) The Ethics of War and Peace

This is the contribution of philosophy to peace research. The ethics of war are related to the law of war, but even what is still legal (under the positive law of treaties, customs and precedent) may not be moral under "natural law" (laws of humane conduct and human rights) or under "divine law".

Religious traditions around the world differ. All the great religions have pronouncements against killing, but the deeds diverge more than the words. When the Indian emperor Asoka was converted to Buddhism, he abandoned his wars of conquest. When Roman emperor Constantine was converted to Christianity, he intensified his wars against the "barbarians". Christianity, like Buddhism, began with absolute pacifism; but the attitude was modified, under Constantine, to the rules of "the Just War" (formulated later by St. Augustine, Thomas Aquinas, and others); and eventually to the attitude of the Crusades against "infidels" and "heretics". Holy wars are more destructive and indiscriminate than "just wars", which are fought reluctantly, temporarily, and only to prevent a greater evil.

The development of thinking on the Just War was traced by Walter Klaassen (1978) and by Michael Walzer (1979), among others. The rules which would allow Christians to fight wars (just intent, just disposition, just authority, exhaustion of all alternative means of redress, proportionality, reasonable chance of victory), and which oblige them to observe certain

rules while fighting wars (just conduct) are quite stringent, and probably few if any real-world wars would qualify as "just", though both sides usually claim justification. The two categories of rules above correspond roughly to "Ius ad Bellum" and "Ius in Bello" of international law.

It is difficult to see how nuclear war could possibly qualify under the rule of proportionality (the means used in war must be proportional to the ends to be achieved; i.e., the damage done by war must not exceed the damage done by the injustice against which the war is waged) and under the rule of just conduct (no deliberate harm to civilians). The letter from the Catholic Bishops in the U.S. (and similar church documents in Canada and in Britain) have recently agonized over the morality of nuclear deterrence. The decision seems to be that nuclear retaliation after a nuclear attack would be immoral, because it would wreak destruction without serving any purpose at all; but then is the threat of retaliation (on which deterrence depends) also immoral? Can one morally (and credibly) threaten acts which one does not intend to carry out? But if it can be shown that deterrence prevents war, is it moral not to engage in deterrence?

Theologian Paul Ramsey (1968) has justified nuclear war if it is aimed at military targets, even if there is serious "collateral" damage to civilians - as long as this was not intended. But are we not responsible for the consequences of our intentions? Moral philosophers would split sharply on this question. Another problem with Ramsey's conclusion is that he seems to advocate a "counterforce" strategy, which is generally considered provocative and leading to instabilities of deterrence by nuclear strategists.

Philosopher John Somerville (1982) has strongly argued that nuclear war is not war at all (cf. Clausewitz's definition of war as "continuation of foreign policy by other means"), but that we should call it "omnicide" (the killing of all, meaning humans, animals, plants, one-cell organisms ...). There is then no meaning to such a phrase as "just omnicide", and nothing more needs to be said about the "justification" of nuclear war. Jonathan Schell (1982) takes the same approach, in describing "the fate of the Earth". Such thinkers assume that nuclear war would be all-destructive, which has been questioned by some, even

peace researcher Johan Galtung (1982). None of us really know, because the empirical evidence is not obtainable before it is too late to reverse the decision. The moral question then becomes "do we have the right to risk omnicide" though it may not inevitably result?

Lothar Schulze (1983) answers with a categorical "no". He wants all nations and individuals to adopt "the universal law of creation", which he formulates as follows: "1. All acts which might lead, directly or indirectly, to the end of all life or all higher life on earth, are prohibited. 2. This law takes precedence over any other existing law". He would also extend it to the eradication of animal or plant species, but that would not necessarily be universally acceptable. (What about eradicating smallpox?). However, in the form here stated, it would prohibit certain environmental abuses as well as nuclear war.

The technical inventions of our time certainly raise new ethical questions, which moral philosophers inclined to peace research must urgently consider and decide.

(e) History and Geography of War and Peace Periods

We can learn something from the history of particular wars (e.g. about predisposing conditions and precipitating incidents), as well as by observing the large-scale patterns of war-peace alterations (or cycles) in history, or over-time trends. One might also include here the geography of war and peace, dealing with spatial as opposed to temporal patterns.

Traditional history deals more with particular wars and their causes and consequences; generalizations have been relatively rare. In social science, these would be called "case studies", although historians view them as valuable in their own right. The temporal and spatial patterns of wars are more in the province of quantitative-behavioural peace research, perhaps; but let us deal with it here, as long as such studies do not involve too much quantification.

One prerequisite to such studies is the collection of lists of wars, for which one needs a careful and precise definition of what a "war" is. What has actually happened in peace research is that various scholars assembled their own lists of wars, using

their own criteria and definitions, which are always stated along with the list, so that we know what phenomena we are dealing with. However, the lists are not identical, because of the different definitions used; and one is sometimes tempted to speak of "Richardson wars" or "Singer wars" or "Kende wars", using the name of the principal investigator, rather than about "wars" in general.

There is no room here to state and evaluate the different definitions. We shall merely indicate what the various lists are and who collected them:

No. of Wars	
315	Richardson (1960b) listed 315 wars ("deadly quarrels" with at least 317 deaths each) from 1820 to 1952.
278	Wright (1942) listed 278 wars (defined in terms of a minimum of 50,000 armed men taking part) from 1480 to 1941.
93 (224)	Singer and Small (1972a) listed 93 wars in which both belligerents were states in the international system (i.e. not civil or colonial wars) above a certain size from 1816 to 1965. (deaths 1,000 troops 50,000.) (There were 224 wars 1816 to 1980, including civil wars, according to a later update.)
146	Kende (1971, 1978) listed 146 international and civil wars from 1946 to 1976.
862	Sorokin (1962) listed 862 international and civil wars from 500 BC to 1937 AD. (967 from 600 B.C. to 1925 A.D. for 12 major European countries.)
366	Bouthoul and Carrere (1976) listed 366 international and civil wars. 1740-1974.
111	Stockholm International Peace Research Institute (SIPRI) (1969) published a list combined from several sources, 1945-1968, but have not continued this.
255	Butterworth (1976) listed 255 inter-state conflicts (which is not the same as wars), 1945 - 1974.
163	Azar's COPDAB data (an events data bank) permits compilation of conflicts in any recent years. This was done (Azar dnd Eckhardt, 1977) for 1945 - 1975 when 163 major conflicts were found.

One set of conclusions drawn by Beer (1981) from such lists is: Since 1815 to the present wars have become (1) less frequent, (2) shorter in duration, (3) greater in "scope" (number of participating nations), and (4) greater in magnitude (number of deaths) as well as in intensity (number of deaths per population of participating state). Beer characterizes this trend in the nature of war as a trend toward "war concentration": a few very high and sharp peaks of violence against a generally low background, while in the past the peaks of violence were lower but wider. Others have noted the trend of increasing the ratio of civilian to military deaths in modern wars, as aerial bombing became an "acceptable" method of waging war. (Though breaking the "just conduct" rule of the Just War rules - see above).

Besides long-range secular trends such as the above (which probably depend on technology), some investigators have observed repeating cycles. Among these are studies by Alcock (1980), Denton (1966), and others. Long-range (about 100-year) cycles of "hegemonic wars" were studied by George Modelski (1981). He notes the following repeating pattern: A period of peace dominated by one great power (Portugal, Spain, Netherlands, Britain, United States have held this dominant position in turn in the last 400-500 years); a challenge by a newly rising power; a large war in which the challenger power wins; a treaty confirming the new status quo (such as Westphalia 1648, Utrecht 1713, Vienna 1815 ...); and period of peace dominated by the new great power. Recently, Dieter Senghaas (1983) delivered some thoughts on these cycles, speculating that perhaps this cycle will be broken now, for various reasons.

It has often been said that peace researchers study wars too much and peace not enough. One could argue by analogy that medical researchers have to study disease in order to foster health; nevertheless, a more positive attitude demands that we study "positive health" and "positive peace" as well. While the study of wars may be termed "polemology" (and the institutes in the Netherlands and in France use this designation in their names), the study of peace might be called "irenology" or "irenics", and peace research should do more of it. Elise Boulding (1982) and others have pointed out that we need to visualize, in vivid images, what a future peaceful and disarmed world would look like, before we can achieve it.

It is therefore useful that at least one researcher, Matthew Melko, has studied the periods of peace in the world's history. (Melko 1973, 1981). His definition of "peaceful" includes only "internally peaceful" areas, though, so that his "peaceful societies" might be very aggressive externally. Both K. Boulding (1978) and Bruce Russett (1982) have noted that certain areas at present are islands of "stable peace" (where war is unthinkable among regional powers); such areas are Scandinavia, North America, Western Europe as a whole (where the long enmity between France and Germany has ended), and perhaps the whole area of the OECD countries (Western Europe, North America, and Japan), where certain values have become shared and wealth levels have become shared and wealth levels have exceeded a certain threshold. Some critics would point out that this area of peace may have been achieved only at the cost of exploiting the rest of the world, or at least "exporting wars" to the Third World.

While there are areas of stable peace, there are also areas of "stable war" in our world, where war is the general rule and peace is the exception, almost a "peace crisis" (Edward Azar 1979). *This war-prone area has been described by A. and H. Newcombe (1980), as "the fuse" that might light World War III. It extends from the Southern tip of Africa through East Africa and the Horn to the Middle East, through Iran and Afghanistan to South Asia, then to Southeast Asia, China, Korea, and the USSR. Almost each state along the way has two hostile neighbours, one on either side, and all are "over-armed" in comparison to other states in the world. (See A. Newcombe's "tensiometer" studies, 1972, 1974, 1978-79).

(f) Economics of War, Peace and Development

The greatest worry in this field of peace research used to be "will we have a depression in case of disarmament?" Now the question has changed entirely, to: "Will we ever get rid of the inflation-unemployment combination (so unforeseen by orthodox Keynesianism) unless we institute disarmament?" From an economic boon, in the short term, the arms race has turned into a long-term burden of nightmarish proportions.

* K. Boulding (1978) classifies areas of stable peace, unstable peace (i.e. occasional wars), unstable war (usually war, but sometimes peace), and stable war.

This flip is reflected in two different issues of Peace Research Reviews: "Economic Consequences of Disarmament" (Saltman 1972), which documented hundreds of multinational studies regarding the first concern mentioned above (among them the Canadian one (Rosenbluth 1967)), and the later "Economic Consequences of Armaments" (A. Newcombe, Lloyd Dumas et al, 1977) discussing the second concern.

The arms race has some very direct inflationary effects (because military goods are not consumable nor are they used as tools for future production, and yet people are paid to produce these unconsumable goods) and some even more significant long-range inflationary effects: the luring of investment, resources, and scientific talent from the non-military sectors (because military industries, being on cost-plus contracts, have no incentives to keep costs down, and therefore bid up prices and salaries). Non-military industrial technology languishes and deteriorates in highly militarized countries, which then find themselves unable to compete in world markets with other industrialized countries not so highly burdened with military expenditures. This may be the basic reason why Japan and Germany have done so much better in world markets than the U.S. or U.K. Amazingly, not many economists have noticed this high correlation between high military expenditures and world trade problems.

There is also a curious lack of mention of the military expenditure factor in the "shift of the Phillips curve", which has brought us the phenomenon of "stagflation", i.e. the combination of high inflation and high unemployment. These two economic ills used to be thought of as "offsets" in Keynesian thinking, and government planners could simply decide which would make them less unpopular at the moment, inflation or unemployment, and manipulate the economy accordingly, by fiscal or monetary measures. The reason why we now get both economic ills at once has been ascribed to various causes, such as high oil prices - but the "shift" was observed already before 1973. Very few economists seem as yet to single out high military expenditures as an outstanding cause. This certainly needs more research.

Why would military investment increase unemployment? This seems a little less clear, at first sight, than the effect on

inflation; in fact, many people would still say that military industries bring jobs. They do; but it has been shown convincingly that the same dollar investment put into consumer industries would produce more jobs, because the latter sectors tend to be less technological and more labour-intensive. The question still remains whether such substitute investment would be forthcoming; possibly not by governments whose philosophy is not to interfere in the economy (except in military production. See Seymour Melman, "Pentagon Capitalism" 1970*); but perhaps private industry would invest in consumer goods production if military contracts were no longer available and therefore taxes could be lower. "Conversion planning" from military to civilian production can be done both by governments and private businesses. This is why the earlier studies (as reported by Saltman 1972) showed that conversion to peaceful production is possible in all three types of economies: market-oriented, planned, and developing. All types would benefit in the long run, after overcoming some transitional difficulties.

The above discussion concerned effects of armaments or disarmament on industrialized economies. Regarding the developing countries, there has been much work done recently, some of it under the aegis of the United Nations, on the link between disarmament and development. The technical report of the U.N. Experts Group formed after the First U.N. Special Session on Disarmament in 1978, the so-called Thorsson Report, was summarized in popular form by Clyde Sanger (1982). Many linkages are traced there, not a single or simple one. For many years before and since, Ruth Sivard (1974-1980) has been publishing her annual collections of data on the military and social (health and education) expenditures of 140 nations. The implications are obvious: a a nation's GNP is a pie divided into slices, and what goes to the military cannot go to food or education (or nutrition or clear water), so desperately needed in many of these countries. "Let them eat bullets" exclaims Ruth Sivard in one of her writings. (1975)

Sanger (1982) talks about armaments leading to underdevelopment leading to insecurity leading to more armament ... and so on in a spiral. The hope he suggests is to reverse the gears: have

* See also his "Permanent War Economy" (Melman 1974)

disarmament produce more development which would give more security which would make possible more disarmament . . . How to reverse gears in this manner is not merely a question of getting disarmament agreements, or disarming by graduated reciprocated initiatives (more about this later); it is also a matter of planning for economic conversion. Relatively little has been done on detailed plans for this by governments or industries, but there are good grass-roots examples, e.g. at Lucas Aerospace in Britain, where a research committee of shop stewards designed hundreds of new useful products which the company could make instead of weapons; the management at first resisted, but may now be adopting some of the ideas. The workers' motivation was not only peace, but also job security, because military contracts were too much an "on-off" proposition. (Cf. for example Mary Kaldor, 1980). Similar events took place at Vickers, also in Britain.

Peace-related economics has much more to say than what has been sketched above. For example, the links between disarmament and environmental and resource protection and conservation is a field where research is only beginning. Obviously, the arms race is very wasteful in scarce resources, e.g. rare metals as well fossil fuels; and with respect to pollution, it suffices to mention that radioactive wastes from military nuclear production are much more plentiful than wastes from civilian power reactors, about which there has been so much concern.

Another huge subject, well-explored but impossible to cover here, is the field of development economics. Many models exist, and the literature is vast and the controversies sharp. In view of the generally accepted link between development and disarmament, and development and security (cf. Sanger, above), this is obviously a peace-related subject, though usually considered out of the field of peace research, primarily because of the wealth of information and ideas contained therein, which justify calling it a field in its own right.

(g) Psychology, Sociology, and Anthropology of Conflict, Violence and Nonviolence

While studies in this field are almost by definition "behavioural", except when dealing with attitudes (which are,

however, often defined as "predispositions to behaviour"), many are non-quantitative. Therefore, we will mention a few trends here, while returning to the subject later under quantitative-behavioural studies.

In psychology, the level of conflict under consideration is inter-personal, not international; sometimes even intra-personal. In sociology and anthropology, the level of conflict is mainly inter-group or intra-group - i.e. above the interpersonal level, but still below the international level in which we are mainly interested. This is nevertheless useful to peace research, if the assumption is made that conflict, as well as violence, both have certain characteristics which apply across levels. One must be careful, of course, not to over-generalize: all characteristics may not have such cross-level generality. A careful examination of each case must be made to establish to what extent findings are transferable to the international level.

Ethologists like Lorenz (1966) and Ardrey (1961) seem to find evidence of a human aggressive instinct analogous to that of some animals; but intra-specific killing among animals is rare, because of rigid and vigorous inhibition in the presence of "surrender rites" by the defeated animal, who then cannot be killed by the victor. Humans lack this inhibition, perhaps because our "natural" weapons (tooth and claw) are not powerful enough to be dangerous to survival. Our "unnatural" (artificial) weapons are too recent to have affected evolution. Ape societies (just like chickens) tend to establish a "pecking order", i.e. a hierarchy in which each individual is aggressive only to those below him and is the victim only of those above him. We say "him" deliberately, because among apes the hierarchy is established only among males; females seem to have a more horizontal "clique" structure. Human analogues of this possibly important sex difference have been found among kindergarten and nursery school children. (McGuinness, 1980). In any case, hierarchies minimize open conflict, because everyone gets to know his place in the authoritarian structure; though the order had to be established in the first place by trial-and-error aggression attempts. When a stranger arrives, open aggresion must prevail for a while until he finds his place in the hierarchy. In an established system, there seems to be only "structural violence", not "direct violence". The two variants of violence seem to be

transformed into each other like potential and kinetic energy in physics.

Is violence then "primitive" and its control "civilized"? This does not seem to be so at all; on the contrary, according to Eckhardt's (1982) survey of anthropological studies (he is a social psychologist and a peace researcher himself), human primitive societies had far less war than civilized societies, and what war there was among primitive peoples was very small scale. This may be partly due to technology, partly to intense competition over land (since the agricultural revolution) and resources and markets (since the industrial revolution), partly to much greater interaction and communication among groups (interaction intensifies both conflict and cooperation); and partly, as Eckhardt maintains, to the inequalities inherent in civilized societies; primitive societies were much more egalitarian (at a low level). Eckhardt's prescription is to make civilized societies more equal, but one wonders about the influence of the other factors named above.

In a cross-cultural survey, Raoul Naroll (1974) studied military deterrence in history, in an attempt to apply anthropological methods to research in comparative history. Twenty historical times and places between 225 B.C. and 1776 A.D. were chosen for study. Major rival powers in particular civilizations were studied, such as Rome vs. Carthage, Byzantium vs. Persia, China vs. Tibet, France vs. England, Muscovy vs. Novgorod, Spain vs. the Netherlands. The main finding was that armaments do not lessen the frequency of wars (thus deterrence does not work), but armaments help to win wars when they occur. So the decision to arm should depend on whether a nation wants to avoid war or win war - whether it aims at peace or victory.

Perhaps in this connection we should also mention Singer's finding that in the 19th century, the nations initiating war (or, as some would say, the aggressors) tended to win wars, but that in the 20th century, this no longer applies.

Physiological bases of the psychology of aggression were traced by Laborit (1978). If drives to satisfy basic needs are blocked, frustration builds up, which may lead either to immediate lashing out (frustration-aggression) or withdrawal; and if this

does not pay off, prolonged anxiety will exist which may lead to psychosomatic illness or displaced aggression against inferiors in the pecking order or strangers (irritation aggression). Humans and other social animals, in order to prevent such frustrations, tend to hoard potentially gratifying objects (possessions, territory), which they then may have to defend against others or try to take away from others (competitive aggression). Some animals also display predatory aggression, inter-male aggression, and maternal-protective aggression, but these are not important for humans; even frustration aggression (immediate anger) is not linked to armed conflicts in any major way, except perhaps in triggering incidents. To defuse the main forms of human aggression (irritation and competitive), we need to understand brain physiology a great deal better. Definite neuro-transmitters which mediate some of the responses described above are identified in the article.

Individual rages originate in the limbic system of the brain (the "mammalian" layer in the "triune" brain; the lower being "reptilian", concerned with drives and instincts, and the higher being the specifically human cortex). Some pathological defects in the limbic system may trigger uncontrollable rages; this may be a factor in some unexplained irrational crimes of violence, but has no connection whatsoever with international war. Delgado (1971) reports that electrical stimulation of certain parts of the brain can stop a charging bull and make it docile; and this could be done for certain human pathologies too. Again, this works only for violence at the individual level, and then only if one is willing to walk around with electrodes implanted in the brain.

Individual violence has also been related to drugs, dietary deficiencies, male hormones, and the famous extra Y chromosome (but the latter has now been disproved as a factor in violent crime). Some of these mechanisms have been reviewed by Alan Newcombe (1978b), who then goes on to review the attitudinal and behavioural factors which are mentioned elsewhere in this paper. (This article is included separately in this issue of Peace Research Reviews.)

Eckhardt (1974) has argued that aggression, whether it is innate or learned (an on-going argument largely irrelevant to war prevention), has much less to do with large-scale violence

(internal or international wars) than does conformity or obedience of orders by superiors. The individual soldier in the battlefield is not often angry in the physiological sense, but obedience is something in which he has been carefully trained. Basic training for military service is essentially obedience training. The story of a line of soldiers walking off the cliff because the commanding officer forgot to say "halt" illustrates this in the guise of "humour". Conformity and obedience factors will be discussed later, because a well-developed line of experiments deals with this issue.

(2) Quantitative-Behavioural Peace Research

The topics summarized under this heading usually do not fit totally into any single discipline, and therefore no attempt will be made to indicate a particular discipline. These topics might be considered the "core topics" of any peace studies course as such, i.e. the topics that would have to be taught separately by an experienced peace researcher; while the topics in the previous section could be taught by someone specializing in each discipline as indicated.

(a) Arms Race Theory

Although Richardson wrote his major works long before 1960, he is still considered one of the "grandfathers" of peace research, because, in his words, he attempted to write "quantitative history". His works, although written earlier, were not published in book form until 1960. As K. Boulding remarks, peace research pioneers are distinguished by the fact that they read Richardson on microfilm. (Boulding, Newcombe and Newcombe, 1963).

Richardson quantified history in two different ways: in "Statistics of Deadly Quarrels" (1960b), he examined wars of various sizes in relation to a whole series of variables, trying to obtain rough correlations; variables such as number and length of borders, religious differences,national or linguistic differences, economic causes, etc. This type of study became a prototype for many later "correlates of war" studies, which we shall mention later. (Richardson's findings are summarized on p. 107 of Newcombe, H. and A., 1969).

However, in this section we want to examine Richardson's

other quantitative history contribution, which took quite a different (more theoretical) form: The derivation of a simple set of differential equations to describe arms races. This was developed in his second book "Arms and Insecurity" (1960a). The basic assumption is that, between two adversaries A and B., A's rate of arms build-up (dx/dt) is proportional to the level of B's armaments, and vice versa; the proportionality coefficients are k and l, the "defence coefficients". These equations would represent pure explosions through "positive feedback", but the addition of "fatigue and expense" terms, ax and by. preceded by minus signs, dampens that down somewhat, so that equilibrium becomes sometimes possible. Further terms added are constants (g and h) for the "grievances and ambitions" that caused A and B to regard each other as enemies in the first place. The completed set of equations is, for A, $dx/dt = ky - ax + g$, and for B, $dy/dt = lx - by + h$. An arms race described in this way can level off if the coefficients have certain values, or it can explode indefinitely, which would mean either going to war or going bankrupt.

Others have modified these equations to produce a better fit with observations. (Richardson's equations fitted quite well the data for the arms race preceding World War I, but less well those preceding World War II, and even less those preceding World War III (if we can very pessimistically so describe the present superpower arms race)). Boulding (1961) and Smoker (1964) made the dx/dt vs y and dy/dt vs x plots curves rather than straight lines, and explored the idea of "submissiveness", already introduced by Richardson. (Submissiveness is exhibited by B if B decreases his rate of arming in response to A's increased level of armaments). Wolfson (1968) made the two adversaries A and B unsymmetrical, assuming that A was a status-quo defender power and B was a challenger power; and he also used difference equations instead of differential equations. Smoker (1964, 1966) made the arms race an "open system" rather than Richardson's "closed system", by allowing continuing influence of political events on the course of the arms race (Richardson considered only the initial "grievances and ambitions", after which the arms race ran on by its own internal dynamic alone). Smoker (1971) removed the Richardson assumption of strict bipolarity by considering A and B to be alliances, with some internal dissensions. Finally, Smoker (1967) included consideration of the INGO integrative system as a

counterpoise to the inter-nation threat system which fueled the arms race.

Some scholars have disputed that wars are correlated with preceding arms races. Other considerations are sometimes introduced (e.g. by Weede), such as that increasing armaments by a challenger power are associated with subsequent war, but if the status quo maintains its lead in armaments, peace tends to continue. Michael Wallace (1979) carried out a statistical test of these contentions. He constructed an arms race index, which depended on the arms increases of both powers. He found that disputes preceded by arms races (as defined by this index) escalated to war 23 out of 28 times, while disputes not preceded by arms races resulted in war only 3 out of 71 times. (The data used Singer's "Correlates of War" data.) In another paper, Wallace (1980), reports a test of the Weede hypothesis: when the challenger power was ahead in the arms race, war resulted in half the cases (12 and 12); when the challenger power was behind in the arms race, war results in 18 out of 71 cases. So there is some evidence for the Weede hypothesis too, but much weaker than for the arms race hypothesis. A comparative test including both indicated that most of the variance was accounted for by the arms race hypothesis, only a marginal amount of variance by the Weede hypothesis. The policy recommendation for the U.S. that would follow from this is this: The U.S. should not try to stay dominant in the arms race with the USSR, but try to moderate the arms race by mutual agreement or mutual example - if the aim is to avoid war.

These were all useful amendments to Richardson. However, a real paradigm shift occurred when Dieter Senghaas (1973) introduced the concept of "autistic" arms race, i.e. arms races that were propelled by factors purely internal to each country (technology, military-industrial complex, etc.), rather than by external factors (mutual action-reaction mechanisms), as Richardson, Smoker and Wolfson had it. Milton Leitenberg (1978) claims that arms control negotiations are hindered (on the U.S. side, which he knows best) more by obstacles within the country (bureaucratic inertia, conflicts between agencies, departments, and branches of the armed services) than by obstacles the Russians put up. It may be the same on the Soviet side. Gernot Köhler has combined the Richardson and the Senghaas paradigms of

arms races into a single overarching view. (1975).

(b) Games That Simulate Disarmament or Crisis Dilemmas

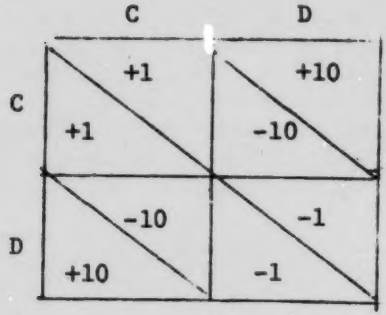
Game theory, a branch of mathematics originally set up by von Neuman, is usually seen as a paradigm of pure conflict: what one part gains, the other loses, and vice versa. Such pure conflict games are called "zero-sum games", and many of them can be "solved" mathematically (i.e. optimum strategies can be calculated for each player). However, of more interest to peace research are the so-called "non-zero-sum games", which contain elements of both conflict and cooperation. Many of these do not have unique mathematical solutions; in fact, they present certain paradoxes and dilemmas.

Of the 78 two-player 2-strategy games that are theoretically possible (Rapoport and Guyer, 1966), some are games of pure cooperation ("trivial"), some are games of pure conflict ("strategic"), and some are games of mixed conflict and cooperation. Of the last category, the most famous are "Prisoner's Dilemma" (PD) and "Chicken", although games of "Force", "Threat", "Hero", and "Leader" have also received some attention.

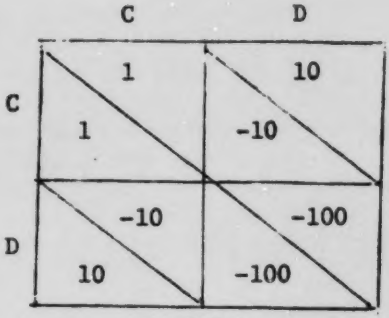
The Prisoner's Dilemma (PD) game models the disarmament dilemma: players A and B would be better off (because they would save the money and be more secure) if they would both disarm; but when each make their choice (to arm or disarm) independently and in ignorance of what the other player is deciding, each has to decide to arm, so that both end up armed, which is a less desirable outcome for both. The reason why each has to decide to arm is this: if the other arms, then one must not be disarmed, or one could be attacked or blackmailed; if the other disarms, then also one should arm, because then one could threaten or blackmail the other. So by both defensive and offensive reasoning, one should arm, if one is a rational self-maximizing actor. The same argument applies to the other player, since the game is symmetrical. (See game matrix below). Even if a disarmament treaty has been concluded, a similar argument applies to deciding whether or not one should cheat on the treaty by keeping back a few missiles.

The Game of Chicken models a different situation: Brinkmanship in a crisis. Again, both players try to avoid uni-lateral cooperation (C choice), which would mean giving in or surrender; but if

neither gives in, then both crash, with a highly negative payoff. How can they communicate or trust each other to end up both cooperating?



Prisoner's Dilemma



Chicken

How to get out of these dilemmas? With Chicken, a minimum of cooperation between both players would allow them to maximize their long-range payoffs at CC, or at least to alternate CD and DC; both have a common interest in avoiding DD. PD is actually a more acute dilemma, since the "natural outcome" is at DD, which is not the best payoff for each player. The dilemma in PD can be overcome by having motivations other than the maximizing of one's own short-range gains: either maximizing the common gain, or using a norm of equity (which makes the unsymmetrical outcomes CD and DC undesirable), or obeying the Golden Rule or Kant's categorical imperative (so act that you would be willing your act to become the universal rule), or being altruistic; or one could try to maximize one's long-range gain, assuming that the other player can learn to either trust you or distrust you, that either of you can be either trustworthy or untrustworthy; or one could have a binding contract between the players, something like a common government or a social contract. Some of these ways to overcome the PD dilemma were studied by H. Newcombe (1977b). the "long-range interest" solution was formalized mathematically in the so-called "metagame" approach by Nigel Howard (1971).

Non-zero-sum games are not simply an exercise in mathematics; they can also be used as tools in psychology. It is one thing to say, deductively, what a "rational player" would do; but quite another to observe, experimentally, what real people actually do. Fortunately, real people turn out to be less selfishly "rational" than the fictitious "rational player", who is something like "economic man". Why do we habitually equate rationality with selfishness, anyway? Rationality is only the means to attain our ends more effectively, and our ends need not be selfish. Leaving that argument aside, we note that Rapoport has carried out numerous experiments, especially with PD games (Rapoport and Chammah, 1965; Rapoport, 1967); and following him, so have many others (see the "Games section" in many issues of the Journal of Conflict Resolution).

Pairs of players tend to lock in, after a brief period of "learning", on either CC or DD; but for large numbers of pairs, the general level of cooperation tends to fall at first and then rise, as the series of games continues. This means that more pairs are locking in on CC than DD. When a real player plays (unknowingly) against a pre-programmed "stooge", one finds, interestingly, that the player's response to a stooge who plays nothing but C is to either cooperate completely or to exploit him completely, with people falling neatly into two classes of players. So being too cooperative, or unilaterally "nice", can be a trap of temptation for others who interact with you, and you can make them into exploiters when they otherwise might not be. The stooge strategy that elicits most cooperation from the real player is "tit for tat", i.e. responding to a C with a C and to a D with a D. However, this might produce a lock-in on DD; and to get away from that, the player who wants to elicit maximum cooperation from the other will then play an occassionally tentative C to signal willingness to cooperate. This is something like a "GRIT" move (graduated reciprocation in tension reduction, invented by Charles Osgood (e.g. Osgood 1962 and many other writings)), and the overall strategy of tit for tat combined with GRIT has been called "the Queen's strategy" by A. Newcombe (1969), and recommended by him as a probing strategy for a "foreign policy for peace (A. Newcombe, 1978c).

Many other intriguing games have been played experimentally, to simulate situations relevant to peace, conflict, trust,

competition, and cooperation. They have been reviewed by Rapoport (1967). Some use trucks, switches, chips, and other equipment to make them more realistic.

Axelrod (1984) invited 14 experts to submit strategies for a round-robin tournament of Prisoner's Dilemma games, played by a computer; the winner was Tit for Tat, entered by Anatol Rapoport, and the shortest program of all (5 lines). Axelrod then published the results and solicited entries for an open tournament; against 62 sophisticated strategies from 6 different nations, all devised knowing that Tit for Tat would be entered against them, it won again. Tit for Tat cooperates on the first turn and then does whatever its opponent did on the previous turn. Tit for Tat would not win against opponents playing all D; but against strategies that sometimes cooperate, it does well.* Four qualities make Tit for Tat so robust: it is "nice" (never the first to defect); it is "provocable" (immediately punishes the other's defection); it is "forgiving" (willing to return to cooperation after an isolated defection); and it is "clear" (easy for opponents to figure out). - The Prisoner's Dilemma resounds in society (price wars, parliamentary trade-offs) and in nature (wolves in packs, birds helping each other protect territory). "Many of the benefits sought by living things are disproportionately available to cooperating groups . . . This statement lays down the fundamental basis for all social life." It is the foundation for ethics, ritual, altruism, and trust. Axelrod goes on to apply this principle to evolution of the species, Down's syndrome, trench warfare, diamond marketeering, disarmament treaties, divorce laws, bureaucracies, antritrust agencies, Pearl Harbor, Vietnam, the Falklands, and much more.

Rapoport (1960) has classified conflicts into three categories: fights, games, and debates. Fights, which are irrational cataclysmic explosions of action-reaction, are well exemplified by arms race theory, discussed in the previous section. Games, which are rational conflicts of strategy which

* Tit for tat does not win against each of the more complex strategies; what happends is that they "kill each other off", while tit for tat is a survivor. This is analogous to a truel (3-cornered duel) situation, in which the worst marksman wins, because the two good ones aim at each other.

try to outwit the opponent, are modelled by the games described in this section. Debates, which are persuasion attempts, verbal arguments used in "dissensus" (disagreement on values), are a milder form of conflict, which is not explicitly described in this review, except indirectly in the section on attitude change.

(c) Simulation as a Research Tool

A simulation is a much more extended and complex "game", in which participants play the roles of decision-makers in a conflict situation. Simulations are classified into "all human", "human-machine", or "all-machine", depending on the part played by computers (machines). The all-machine simulations are really in a class by themselves, being mainly methods of calculating out the implications of certain models; an example would be the computer simulation involved in the first report to the Club of Rome on "Limits to Growth" (Meadows et al, 1972), which used the "World Systems" model of J. Forrester (1971). Or there was the computer simulation of the Vietnam war by J. Milstein (1968). All-human simulations are simply role-playing exercises, in which people can practice the negotiation of treaties, or bargaining sessions of all kinds. The main effort in early peace research has been in the mixed simulations, using both human participants to make certain decisions and computer programs to work out the implications of these decisions.

The most famous of these mixed simulations has been H. Guetzkow's "Inter-Nation Simulation" (INS). (See Guetzkow, 1963). The computational parts involved figuring out the results of budgets and other economic allocations (largely deterministic calculations), as well as predicting results of elections and revolutions if the people were either satisfied or dissatisfied with the government at certain levels of satisfaction (probabilistic calculations). Victory or defeat in war was calculated largely on the basis of the weapons and money allocated to the war effort, as well as a "morale" factor based on people's satisfaction.

INS was used as a research tool to study the effect of nuclear proliferation (Brody 1963), the implications of using GRIT (reciprocated unilateral initiatives) (Crow 1963), the capacity to to delay response in a deterrence situation (Raser and Crow, 1964), decison-making in crises (Hermann 1965), and to simulate the

origin of World War I (Hermann and Hermann, 1962). Interestingly enough, in repeated runs of the pre-World War I simulation, in which the situation was set up from historical data to resemble that in the real world preceding the 1914 crisis, a war resulted in some simulation runs but not in others. Does this mean that the simulation is not "valid" as a research method, or that history is not deterministic, and World War I need not have happened?

Other international simulations were designed, among which we will mention only Paul Smoker's "International Processes Simulation", IPS (Smoker 1968). It tried to get away from the purely nation-state-centred world of INS (although INS had an International Organization similar to the United Nations), and introduce non-state actors such as multinational corporations, inter-governmental organizations, non-governmental organizations, and national liberation movements.

The hope was that simulations could become the laboratory (experimental) supplement to the historical case-studies and historical aggregate analysis studies on wars and conflict, the latter being only observational. However, the validation problem was never settled to everyone's satisfaction. Nowadays, simulations are used almost exclusively as an educational tool, and no longer for research.

(d) Events Data Analysis

If we want to determine why nations behave as they do, then we basically need to carry out a correlation analysis of a whole series of independent variables (factors that we hypothesize might affect the behaviour of nations); and we need to measure the one single dependent variable that we are interested in, the way nations behave. The method of events data analysis is essentially an attempt to operationalize and quantify this dependent variable, the behaviour of nations.

The behaviour of nations toward one another consists partly of "transactions", the daily undramatic massive transfers of goods (i.e. trade), money, information (e.g. mail flows, phone calls...), and people (travel) which forms the background of everything, but goes largely unnoticed, because it is not reported in newspapers; only aggregate data are ever collected, not individual events.

Secondly, the behaviour of nations toward one another consists of "interactions", single, more noticeable events, often reported in the media; such as the signing of trade agreements, the recall of ambassadors, protest notes, formation of alliances, head-of-state visits, and border clashes.

In events data analysis, the events are collected from daily newspapers; records are made of the actor, the target, the type of action, and the date, as well as the issue area; and such events data are then usually stored on computer tape for later retrieval for various analytical studies. In most cases, the events are also either categorized into "conflictful" or "cooperative", or scaled on a 15-point scale of conflict-cooperation.

Among the events data banks which exist, we might mention WEIS (World Events/Interaction Survey) (cf. Charles McClelland, 1967), COPDAB (Conflict and Peace Data Bank), (cf. Edward Azar, 1970), and CREON (Comparative Research on the Events of Nations) (cf. East, 1976). It soon became apparent (Azar 1969) that using a single newspaper source (New York Times was usually used) is not sufficient, because different sources may cover different events; in one comparison, the overlap between NYT and Le Monde or the Middle East Journal was only about 5%. It has become customary now to use multiple sources for the events data.

Events data banks have been used for various studies: the union of Egypt and Syria in the United Arab Republic and the subsequent break-up of the UAR (Azar 1970), the profiles of various crises (usually the number of events in a crisis rises dramatically, as well as their degree of conflictfulness), and long-range relations between the super-powers. In most dyads (nation-pairs) that interact, there is a "normal relations range" in which most events fall (much more conflictful in the Israel-Syria dyad than in the Canada-US dyad, for example); and when events start to run outside this normal range, we have a "crisis"; it would be a crisis in the usual sense if the normal relations range has been crossed toward the more conflictful side, but perhaps a "peace crisis" (like Egypt-Israel 1977) if it has been crossed toward the cooperative side. Here, "crisis" simply means a sudden change away from the "normal".

(e) Crisis Research

As indicated above, events data research leads naturally into crisis research; but there are also other methods and approaches to this important topic. A series of important studies were carried out some 20 years ago at Stanford University, dealing with the 1914 crisis preceding World War I. (see e.g. North, Brody and Holsti, 1963). The method was based partly on the content analysis of historical documents - messages that were exchanged between the major nations of Europe at this time. Conclusions were drawn from this about the perceptions (or sometimes misperceptions) that were operating about the intentions of the other powers, both allied and adversary.

In other studies (Holsti 1965), it was found that in crises, perceptions of time change (there seems to be less time for decisions, because messages are much more frequent and urgent); perceptions of alternatives and options available narrow down, and uncertainty can become so psychologically upsetting that resort to war is almost welcome as clarifying the situation. The pressures are quite heavy on top decision makers who may not, at such a time, be getting enough sleep or mental relaxation.

Crisis has been defined (by C. Hermann, 1969) as an international situation in which three components are present: high threat to important values, short decision time, and surprise. Patricia Close (1979), however, would rather regard crisis as "uncertainty"; this captures better the meaning of "crisis" as both "danger" and "opportunity", as a turning point for the better or the worse. "Uncertainty" here means structural complexity so intense that outcomes become unpredictable, even by the rules of probability, and therefore any rational decisional calculation becomes impossible. This also sounds like the description of a transition from one state of the system to another.

(f) Predictions of War: Early Warning Systems

If wars could be predicted, counter-measures might be introduced (by the U.N. or others) to prevent them. We have some findings indicating which nations or nation-pairs are war-prone, but "point-of-time" predictions cannot be made.

From mathematical relationships between the GNPs and military

expenditures of nations, it is possible to predict which nations are likely to become enmeshed in war in the subsequent 5 years: the "over-armed" nations, those that exceed a certain threshold, are "super-critical" with respect to the risk of war. (cf. A. Newcombe's tensiometer studies, 1972, 1974a, 1978-79). The over-armed nations are 30 times more likely than the others to be involved in war. It seems that armaments do not bring security from war, but rather insecurity.

Newcombe's predictions are long-range (5 years ahead) and for single nations, with no indications with whom a super-critical nation will fight. From the fact that both U.S. and USSR are super-critical, and have been for many years, one cannot conclude that they are likely to fight each other, but only that they will fight wars, such as the U.S. in Vietnam or the USSR in Afghanistan.

Azar's prediction method (1977) is different on both counts: from events data, he can predict wars for the next 6 months, and he can do so for nation-pairs. As already indicated, this is done by observing when a dyad has stepped outside its "normal relations range" toward the more conflictful side, and has therefore entered a crisis. In such a crisis, war becomes much more likely fairly soon, i.e. the trend toward more and more conflictful interactions is likely to continue.

Alcock (1972, 1980) advanced a two-phase theory of the onset of war: in the first phase, differences in ideology, nationality, religion, or class induce feelings of hostility. (This is like the "grievances and ambitions" term in Richardson's arms race equations). In the second phase, arms expenditures and rates of increase in arms expenditures, if they are linked to definite arms races, tend to result in wars, usually just when the arms race is beginning to wind down. Arms races and wars are thus seen as cyclical, as Smoker (1964) has also foreseen in his "wave theory" of arms races. Predictions were 83% successful for nations that went to war abd 77% successful for nations which did not go to war.

(g) Correlates of War

Prediction of war would be greatly improved if we could show which factors or variables were associated or correlated with war. The hope for successful prediction has propelled the many studies

of possible correlates of war, but success has been spotty; armaments and events (as indicated above under "predictions") being the more successful ones. Ideological etc. differences might be a pre-disposing condition, but a forecast based on this would be too long-range.

It has already been mentioned that Richardson (1960b) found some correlates of war. He found that length and number of borders increased the propensity for war (probably through the greater opportunities this provides); common government, intermarriage, common fears, and common culture tend to prevent war; desire for revenge has been an important cause of war, though it declines as the injustice done recedes into the past; economic causes figured directly in only 29% of the wars since 1820; the Chinese have had fewer wars than the average, and the Spanish-speaking peoples more than the average; and religion was a factor for peace in the case of Confucianism, but a factor for war among Christians and Moslems.

J. David Singer calls his long-range continuing project at University of Michigan "Correlates of War" (COW). He explained (1972b) (1972c) that it is concerned with two questions: (1) Conditions under which the amount of war increases. (2) Why only some of the conflicts (serious disputes) for which these conditions hold turn into wars. (This is the old question of "necessary" and "sufficient" causes). For the international system since 1815, data were gathered on wars, perceptions and belief systems (content analysis), material attributes of nations (land, climate, topography, resources, population ...), international system structure (bipolar, multipolar, etc.), alliances, international organizations, and dyadic interrelationships (geographic, linguistic, economic, structural "distance"). - Since the project hopes to have policy implications in terms of helping to prevent war through understanding it, the effort has been focused on variables which (a) have large explanatory power, and (b) are relatively manipulable. Belief systems fluctuate rapildy and are manipulable,but explanatory power is low. Material attributes change only very slowly (while war activity fluctuates rapidly), so correlations cannot be very close; and their manipulability is very low. Most of the effort has gone into the study of the structural variables: alliances, IGOs, dyadic relationships.

Some tentative findings of the COW project were summarized by Singer, Deutsch et al. (1974). (1) Frequency of wars is unchanged over time since 1815. (This is somewhat in contradiction to Beer's (1981) conclusion, noted before, that there is a trend toward war "concentration".) (2) The contagion hypothesis (wars lead to wars) is not confirmed. (But other investigators have found some confirmation for it). (3) There is a weak cycle of 20 to 40 years. (4) Winning an armed attack does not tend to lead to a future war. (5) If another state helps you in a war, you are more likely to win, but future war involvement is also more likely. (6) Alliances tend to predispose toward war since 1910, but predisposed toward peace in 1815-1910. (This is the most often quoted result of this project, being an indication of a system change near the turn of the century). (7) Military strength tends to predispose toward war. (This is in agreement with tensiometer studies (Newcombe, loc cit), and many others). (8) A nation which is powerful is not more likely to go to war when its strength is declining (as has been hypothesized by some), except for the U.S. (9) Wars are extremely unevenly distributed across nations: a few nations (Germany, Russia, Turkey, Paraguay) account for a large proportion of the wars. (The list would have included Britain if colonial wars had been included in Singer's list). (10) Big countries are more likely to get into war. (Temptation outweighs deterrence). (11) Before 1910, 80% of the wars were won by the initiators; after 1910, 60% of the wars were lost by the initiators. Therefore it no longer pays off to start wars.

In another large project, Dimensionality of Nations (DON), a sub-section of it examined the dimensions of international and domestic conflict. (Rummel, 1963, 1964, 1966a and b; Tanter 1964, 1966). Rummel obtained data for 77 nations in 1955-57, and by factor analysis found 3 dimensions of international conflict: war (the most important), diplomatic conflict, and belligerancy (threats and accusations); and 3 dimensions of domestic conflict: turmoil (e.g. spontaneous riots), revolution (coups and purges), and subversion (anti-government organized activities). (Possibly "revolution" is misnamed, since this dimension describes mainly government-initiated oppression and terror and "palace revolutions" that merely displace one ruling clique by another, without much involvement by the people. The "subversion" dimension is the one which encompasses conflict behaviour by the people against the

government. But both "revolution" and "subversion" are organized activities, while "turmoil" is more spontaneous and short-lived). When Tanter tried to replicate this work for 83 nations in 1958-60, the "revolution" and "subversion" dimensions of domestic conflict merged into the single dimension he called "internal war", but otherwise the results were the same.

Rummel and Tanter also found that domestic and international conflict are uncorrelated, in the aggregate (this says nothing about the individual case), and if simultaneous correlations are calculated; there could be a correlation if various lags are introduced. Other authors (M. Haas 1965, Denton 1966) have found such correlations, but not very high ones. The 3 dimensions of international conflict were inter-correlated with each other, as were the three (or two) dimensions of domestic conflict.

Other data sets and analyses of domestic conflict were carried out by Eckstein (1962), Banks & Textor (1963), the Feierabends (1966, 1972), Eckhardt (1977) and others. Eckhardt concluded that the main correlate of domestic conflict is inequality in land and income distribution. Rummel had concluded that the main correlate was demographic pressure. These findings may mean simply that most of the recent civil conflicts have taken place in the Third World. It is known that Third World countries have more of the "internal war" type of domestic conflict (coups, purges, popular uprisings) than the industrialized countries, but the latter have more "turmoil" than the Third World does.

In much later work, Rummel (1975-81, 1983) showed that "libertarian" nations (those that stress internal freedom and minimum government interference with citizens' rights) very seldom fight wars <u>with each other</u>, though they may fight with dictatorships. This is in line with earlier work by Babst (1964), who showed that, under certain definitions of the term, democracies <u>never</u> fight other democracies, only undemocratic countries; but dictatorships <u>do</u> fight each other. Alcock (1976, 1974) showed that two political dimensions are important in keeping down wars: freedom and equality. Russett (1982), examining the "region of stable peace" of OECD nations, would agree that freedom and equality are important in making the region so peaceful; but so is the factor of wealth, which all these countries also have in

common; Alcock would agree with this finding.

(h) Monadic, Dyadic, or Triadic Determination of War?

If we conclude that some nations are particularly war-prone, then we believe in monadic determination of war. (A "monad" is a single unit). If we think that war arises mainly from the interactions of two nations, then we believe in dyadic determination. If we consider interactions between three nations, we are dealing with triadic determination patterns. We could go to higher numbers, but relationships get too complex very rapidly. So the usual next step is a total change in level of analysis, and we talk about systemic determination of war, if we consider the whole international system (all nations) at once. We then no longer cosider the (too numerous) separate links, but only overall configurations, like polarity and alliances.

To find monadic patterns, investigators have looked at the "attributes" of nations, measured by such indicators as population, area, GNP, military expenditure, health and education expenditure, literacy, infant mortality, life expectancy, degree of urbanization, degree of industrialization, number of radios per population, etc. Such indicators are listed in reference books (Taylor and Hudson 1972, Ruth Sivard 1974-80, World Bank, U.N. Yearbooks) and have been subjected to various comparative analyses.

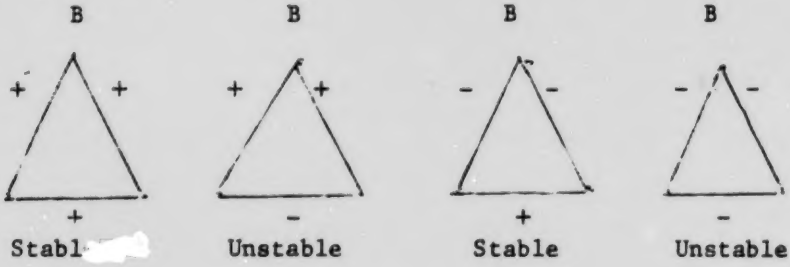
Working under the Dimensionality of Nations (DON) project, Rummel (1972) factor-analyzed 236 national attribute indicators for 82 nations in 1955. The main dimensions obtained were: economic development (which accounted for more of the variance in the data than any other dimension), size (power base), political orientation (democracy vs. totalitarianism), and a series of minor ones: Catholic culture, density, ethnic diversity, Oriental culture . . . When Sawyer (1967) later repeated the work for 82 nations in 1955, he called the main dimensions "size, wealth, and politics", and we can confidently accept the notion that nations are best described by these 3 characteristics, and that these are sufficient for many purposes. In Sawyer's analysis, they accounted for 40% of the variance.

Phase II of the DON project was concerned with Dyadic data. Over 50 variables such as trade, mail, geographic distance, tourists, and threats for 346 pairs of nations in 1955 were factor-

analyzed. The research was guided by "social field theory, which states that the location of dyads (pairs) in the space of their interactions (e.g. cooperation, conflict) is a linear function of the distances between the two nations composing the pair in the space of their attributes. This formalizes the plausible notion that the interaction between two nations depends on how similar or different they are in their characteristics; but the linearity of the relationship is by no means obvious. Nevertheless, the theory has worked out rather well in the light of the data. Some further refinements of social field theory were worked out by Jack Vincent (1976), who formalized a series of propositions predicting conflict or cooperation on the basis of the attributes of the two interacting nations. The original social field theory is explained by Rummel (for example 1977).

Relations in a dyad can be either cooperative or hostile or indifferent (plus, minus, or zero). The "zero" may be either an active one, consisting of an equal mix of plus and minus, or a passive one, meaning no interaction. If we wish, we can divide the interval between extreme plus and extreme minus into more degrees, as in Azar's 15-point conflict-cooperation scale or H. Newcombe's 5-point scale of "friendship, coexistence, cold war, skirmishing and threats, and hot war". The point is, we do have only one scale.

Relations in a triad are more complex, because we have three pairs of nations in a triangle, and any of the pairs can have a plus designating their relations. (We leave out the other shadings, even zero, for the sake of simplicity). Using only pluses and minuses, we have 4 possible triangular configurations, as shown below.



The reason why triangles 1 and 3 are stable and 2 and 4 are unstable (as labelled) has to do with the rules of "cognitive balance" first formulated by psychologist Heider (1958). In both 1 and 3 it is clear who is on which side: in 1 there are no sides, everyone is together, and we call this the "balance of peace"; in 3 there are two sides, polarized 2 against 1, and we call this the "balance of power". In 2, B is torn by conflicting loyalties to A and C who are hostile to each other; 4 has hostility all around, a three-cornered fight, in which each party is torn about who to be hostile to first. There are, of course, 3 ways to draw triangles 2 and 3, depending on where the odd sign goes, and so there are really 8 triangles.

In world politics, one can speculate about such triangles as US-USSR-China, where some shifting of alliances has gone on over the years; or Pakistan-India-China. Triangle 3 is "stable" in the cognitive sense only (it is clear who is on which side), but this configuration is war-prone. Triangle 2, which is psychologically disturbing, is actually a transition stage to the balance of peace; someone has to start flipping a minus into a plus, and be uncomfortable for a while. These ideas were developed and applied to some nation triads by Newcombe and Köhler (1980) and further generalized by H. Newcombe (1977b).

In the chain of nations which we call "the fuse" (section 1 (e)), most nations have a hostile nation on each side of them, and their hostile neighbours are in semi-alliance. Thus we have running along the chain a set of linked type-3 triangles, and the whole chain is polarized. This is a perfect medium for the spread of war from one triangle to another. In addition to their state of over-armament, and in some cases near-nuclear status (apt to "proliferate" on short notice), this polarized configuration is what makes this region in Africa, the Middle East and Asia a particularly dangerous "earthquake" zone. (See A. and H. Newcombe, 1980).

Besides cognitive balance, another consideration arises in triads, when we pay attention to relative power of the three parties, especially in the type-3 triangle. Caplow (1969) described 8 cases of relative triadic power balances, and the effects this can have on stability. For example, when B is the most powerful, but A and C together have more power than B alone,

there will be a tendency for an AC alliance to form and replace B from the seat of power; but when A and C together have less power than B alone, the tendency will be for either small state to form an alliance with the big one, perhaps competing for the honours.

(i) Behaviour of Nations at the United Nations

Many national activities in international organizations have been studied quantitatively: voting, sponsorship of resolutions, elections to U.N. posts, debates, interactions among delegates, negotiations, caucusing, implementation of resolutions, and construction of agendas. This list obviously includes both formal activities (voting, sponsoring, elections, debates) and informal activities (negotiations, caucusing, interactions). Attitudes of delegates have also been studied, as have influence patterns, newspaper "images", and U.N. "events data". Such activities have been studied in several IGOs: U.N. General Assembly, U.N. Security Council, International Court of Justice, Law of the Sea Conference, Sixth (Legal) Committee of the U.N., International Labour Organization, World Health Organization, Economic and Social Council. One could make up a matrix of activities versus IGO and fill in the cells with studies that have been made. However, in such a matrix, many cells would be empty. Every one of the activities named has been studied, as has every IGO named, but not each activity in every IGO.

Studies have been most numerous on roll-call votes in the U.N. General Assembly. Voting is the most common activity studied, and the U.N. General Assembly is the most frequently studied IGO. Quantitative studies of all these types have been reviewed by H. Newcombe (1975), where hundreds of references to individual studies can be found. General Assembly roll-calls have been studied for example by Russett (1966), Alker and Russett (1965), Gareau (1970), Jacobsen (1968), Rowe (1969), Pratt and Rummel (1971), Vincent (1971), and H. Newcombe and coworkers (Newcombe-Schopen et al, 1975-81; Newcombe-Allett, 1981).

Bloc voting has been prominent in the U.N. General Assembly, but the blocs are quite fluid over time. The changes can usually be identified with changes in regime or in alliances in the nation that switches from one bloc to another. From 1960 to 1973, there have been 8 blocs: Soviet, Afro-Asian, Pro-West Afro-Asian,

French African, Latin American, Scandinavian, Western, and Imperial (Newcombe-Allett, 1981). In some years, 2 or 3 of these "elemental" blocs merge into "compound" blocs, only to separate again in the following year. From 1974 to 1977, the bloc structure is better described in terms of 9 blocs: Soviet, Chinese, Afro-Asian, South American, Moslem, ASEAN, Scandinavian, Central American, Western. Regarding issue clusters, the main ones have been East-West, North-South, and supranationalism issues. The main determinants of voting behaviour are wealth (degree of development), political regime, and geography - not size or power. But size and power have been important in elections to U.N. posts and in patterns of influence. Debates have been predominantly constructive and conciliatory, especially in cruises, and have stressed supranationalism; but deeds have lagged far behind words.

(j) Images and Perceptions

Most models of decison-making in foreign policy take into account the fact that decison-makers necessarily decide on the basis of their perceptions of the situation, and of the nature of the opponents and allies and of their own relative strength. When these perceptions are accurate, in their correspondence to reality, the decisions are well founded, though they may still be faulty from a world standpoint if the intentions are not for the common good. When the perceptions do not correspond to reality, we talk about misperception, distortions, and the like. Psychological mechanisms like projection, scape-goating and the like, may make us create enemy images inaccurately. If we then act toward people or nations labelled in our minds as enemies, in a fashion which assumes that they are hostile, they may indeed become hostile because of our actions. This mechanism is called "self-fulfilling prophecy". Often, A and B come to perceive each other as enemies, and their images of each other and of themselves are so similar (in reverse), that we speak of "mirror images". (Cf. Bronfenbrenner, 1961). All of the above must not be construed to mean that all feelings of hostility are based on misunderstanding: some are, but usually there is a hard core of real conflict of interest, which cannot be "psychologized away" by changing our perceptions. What is recommended, however, is thorough "reality testing" of our preconceptions.

The study of perceptions has played an important role in some of the research already mentioned, for example the study of the 1914

crisis by the group at Stanford (North et al, 1963). Among other studies, we might mention those of Ralph White (e.g. White 1968), in which he showed how misperceptions caused some wars that nobody wanted. Many studies of misperception use the method of content analysis, which consists of counting the frequency of certain words in documents. White used a particular variant of content analysis called "value analysis", and used it to analyze the values expressed in the writings of several political and intellectual leaders.

Every person, including national leaders, receives incoming information from the external world through a "perceptual filter", which tends to accept or even overemphasize information which is in accord with previous conceptions, and tends to distort, reject or ignore contrary information. It is only when the contrary information is so overwhelming in quantity and quality that it overpowers the filter's defences, that the person becomes "converted" to a new point of view. Persons differ in how much resistance they put up to conversion; some are very rigid, others more flexible. Rigid personalities prefer an environment of great cognitive clarity, and hence tend to "polarize" when they are in ambiguous situations (e.g. go from triangle 2 to 3 in triadic cognitive balance, as outlined in a previous section), or may be tempted to overcome the cognitive uncertainty surrounding a crisis by going to war. It would be a great advantage if national leaders could be selected for high tolerance of ambiguity, i.e. being able to operate in an environment of uncertainty; or if they could train themselves to tolerate ambiguity.

Everyone carries in their head a "cognitive map" of the world, which consists of beliefs and expectations, perceived alternatives, etc. One can discover one's own map by asking oneself such questions as "if we do this, will the Russians do A, B, or C, or something unforeseen, or none of the above?" Robert Axelrod (1972) developed the mathematics of "psycho-algebra" which can formally deal with such "if ... then ... " statements and how they interrelate. He has applied this to elucidate some historical situations, deriving the basic statements of belief from a content analysis of statesmen's speeches. (1972, 1976).

Perhaps "hawks" and "doves" do not differ so much in their intentions (presumably they both want security and peace) as in

their perception of what others will do in response to their own actions. Briefly, "doves" expect "tit for tat", i.e. "if we are nice to them, they will be nice back; if we are nasty to them, they will be nasty to us". This has been called "the norm of reciprocity", and much of ordinary daily life is based on it. For example, it has been found experimentally that the best way to elicit smiles from others is to smile at them. "Hawks", on the other hand, because they have formed an "enemy image" of the other, expect the following: "If we are nice to them, they will see it as a sign of weakness and get very nasty. But if we are nasty, they will see it as strength and be nice to us, i.e. submit". This has been called "tat for tit", the reverse of reciprocity, and such behaviour too has parallels in daily life. It does involve a confusion (an inferred confusion on the part of the adversary) of the "good-bad" and the "strong-weak" dimensions of the "semantic differential". (This is a concept developed by Charles Osgood, 1971).

(k) Attitude Studies

There have been many scales derived from questionnaire studies - scales that measure attitudes relevant to war/peace questions: e.g. Adorno's (1950, 1964) "F-scale" of authoritarianism, various scales of nationalism or internationalism, conservatism vs. radicalism, militarism vs. pacifism, social responsibility, open vs. closed mind, etc. The value of Eckhardt's work is that he put many such scales together into one giant questionnaire, and did a grand overall factor analysis of the whole collection. In that work, there were 470 questions arranged in 71 scales, and out of the primary factor analysis came 18 factors, 7 of them ideological and 11 of them personality factors. When the factor analysis was repeated using the 18 primary factors as input, there were 5 secondary factors, only the first two of which were important: punitiveness and responsibility. A tertiary factor analysis finally yielded the single overall factor or dimension of compassion vs. compulsion. (Eckhardt 1969, 1972). The secondary factor of punitiveness included such primary factors as militarism, conservatism, nationalism, conventional religiosity, and conformity. The secondary factor of irresponsibility (to put it in the negative) contained such primary factors as neuroticism and cynicism. Almost equally related to both these secondary factors (and right in line with the tertiary factor called compulsion), lay misanthropy, lack of empathy, and faulty childhood discipline

(as recalled). This last factor, faulty childhood up-bringing, is thought to be the cause of, first, low self-esteem, then (following from that) distrust of others (misanthropy), and from that would follow both the cynicisms (lack of social responsibility) and the punitiveness.

Here, then, we have a complete model of "the military-industrial personality" (Eckhardt's term) and its genesis. The causal connection is only speculation, but the links between the attitudes have been empirically confirmed in many subsequent studies, with the same questionnaire or a boiled-down version of it. It applied to adults in Western countries in the 1960s and 1970s; there was a somewhat different structure of attitudes in children under 12 and in adults in some of the developing countries, and also there is some evidence of changes in the 1980s. So there is not necessarily something eternally valid here, but it is nevertheless illuminating.

Hadley Cantril (1965) tried to measure human aspirations in a cross-cultural context. He administered open-ended questionnaires to people in 15 countries from 5 continents, of many ideological persuasions, and at various stages of economic development. He asked individuals about their hopes and fears, personally and for their nation. His method is called the "self-anchoring scale", because he asked his respondents to pin down the top and bottom of their "ladder" (scale) themselves, and then to tell him where they think they (or their nation) are now, hope or fear to be in the future, and expect to be, and aspire to be. This procedure was designed to eliminate the cultural bias of the investigator. It turned out that what people want is similar across cultures: health, clothes, a home, land, education for children. Where people differ is in being optimistic or pessimistic about the future, and satisfied or dissatisfied about the present.

Milton Rokeach (1973) asked his respondents to rank-order 14 "terminal values" (goals) and 12 "instrumental values" (means). Examples of goals are "a comfortable life", "a sense of accomplishment", "a world at peace", "equality", "freedom", "national security", "salvation", "true friendship". Examples of means are "ambitious", "helpful", "honest", "responsible", "polite". He was able to compare whites and blacks (in the U.S.),

religious and irreligious, civil rights activists, artists, businessmen, scientists ... Cross-cultural differences also emerged. A comparison with political ideologies showed that conservatives (pro-capitalists) put freedom high and equality low, communists put equality high but freedom low, fascists put both freedom and equality low, and democratic socialists put both freedom and equality high. (Some of this work was done by content analysis of the writings of political leaders of known ideological persuasions). He also found that, by pointing out to people after the test where they put freedom and equality, and what this implies, he was able to get them to change the ordering the next time they did the questionnaire, and the change was quite lasting when the test was repeated up to 6 months later.

The method of discussing issues with experimental subjects is also used in measuring a person's "stage of moral development", the method here being that of discussing certain "moral dilemmas" represented by stories. The person is judged not by what he/she says the person in the story should do, but why. It is the method of moral reasoning that is being evaluated, not the conclusion. (Cf. Kohlberg, 1973). The 6 stages of moral reasoning are: Fear of punishment, desire for rewards, conformity ("good boy, good girl"), law and order, social contract, and universal conscience. Moral reasoning develops from childhood on, just as cognitive skills do (Piaget). Children begin at stage 1 and progress from there. One cannot skip a stage, but has to work through them one by one. A person can understand the stages below his or hers, but not those above. It is possible to speed up moral development by discussion of moral dilemmas with persons at a higher stage; this is moral education. It is not done by preaching; the understanding comes from within. Many North American adults do not exceed stage 4 (law and order) throughout their lives.

(1) Experimental Studies of Conformity and Obedience

We said earlier that wars may be more related to conformity than to aggression, and now we see that conformity is only stage 3 on the Kohlberg scale, a rather low stage of moral development, which children sould begin to overcome as they reach adolescence. It is useful now to turn to experiments which show that a surprising amount of conformity exists in most adults.

In a famous series of experiments, Stanley Milgram (1973)

tested the extent to which obedience to an authority figure (here the experimenter himself) would go. It went much higher than he ever expected. The experiment pretended to be about learning: the "teacher" (the real subject) would ask the "learner" (a confederate of the experimenter, without the subject's knowledge) to repeat some nonsense syllables, and when the learner was wrong the teacher was supposed to administer an electric shock. The shocks were not real, only simulated, but the learner (confederate) pretended to feel pain. The dial of the shock machine was marked from "low shock - safe" to "extremely high shock - dangerous". Yet, when the learner gave repeated wrong answers, and the experimenter urged the subject to use higher and higher shocks, an average of 65% of all subjects obeyed. The exact percentage depended on the details of the situation - nearness of the victims, whether he could be seen or heard by the subject, whether or not they met and chatted beforehand, where the dial was set before the experiment began. However, even when the victim pleaded "stop, I have a weak heart" even when the subject had to place the victim's hand physically on the shock plate, still a considerable percentage of subjects, though feeling very distressed, would carry on to the highest shock levels, when the experimenter said "You contracted to do this, it will spoil the experiment if you don't, I will take the responsibility for what happens". There was no physical compulsion to stay and carry on, no financial rewards (subjects were volunteers), only the moral pressure of an authority figure.

In a further elaboration of this, Richard Borden (1975) found that the presence of observers had an effect on the rate of obedience. The presence of a military man or a policeman in uniform increased the rate of obedience. (This is in line with the experiments of L. Berkowitz (1967), showing that the presence of a gun on the table increased the incidence of aggressive behaviour quite unrelated to the symbol of the gun). The higher shock rate decreased again when the uniformed observer left, but there was a residual effect - the level remained somewhat higher than before the observer came in. The presence of a Quaker, a pacifist, or a woman decreased the shock level, but the effect stopped when the person left, and there was not even a residual effect.

The subtle interactions between aggression and conformity

were further explored by Knud Larsen (1973). In his model of "the social cost of aggression", he postulated 3 dimensions that determine the threshold of aggression (whether or not it will occur). One dimension is the level of frustration, or the importance of the goal blockage; the second is the social cost, the disapproval or outright punishment that might follow if the aggression is allowed to proceed; and the third is group support, i.e. how many people would "cheer" if the aggression was committed. While the first dimension represents individual motivation, the other two are conformity dimensions - how many others (especially "significant others" - family, friends, superiors, role models) are for the aggression or against it. Social approval/disapproval can either hinder or promote an aggressive act, based originally on individual motivation. The social hindrance/promotion is a very powerful factor in the quantity and quality of aggressive behaviour which is actually observed. A fourth dimension which Larsen might have included is the basic personality set: how low is his/her frustration threshold, and his/her susceptibility to social pressure.

One more observation should be made on the Milgram experiment: when the subjects had been previously tested for their degree of moral development, according to Kohlberg, it was found that only Stage 6 subjects tended to resist the experimenter and refuse to give the shocks. People at lower stages, even up to 5, tended to obey. However, this needs further confirmation, because the numbers of subjects observed in this study were rather low.

(m) Attitude Change

The voluminous literature on attitude change relating to peace/war questions was recently reviewed by L.J. Tinker (1982). She classifies the theories into "cognitive response" and "cognitive dissonance". In the "cognitive response" approach, the target of the persuasion attempt (person A) is seen as either yielding to persuasion or offering resistance, and factors are then tested which might increase or decrease persuasion or resistance. Among such factors are: latitude of acceptance of A (openmindedness), group influence (reference groups), "inoculation" (offering sample opposing arguments and stimulating the production of counter-arguments), labelling a forthcoming message as "opposed", personal involvement,* distraction during delivery of the

* issue involvement

persuasive message, repetition of the persuasive message, distance between the positions on the issue of A and the communicator (B) who is trying to influence A, public commitment, message magnification (how many people say so), expert status of B, competence of B, credibility of B, attractiveness of B, leadership style of B, ego-involvement or neurotic anxiety or guilt or low self-esteem of A. There are numerous experimental studies on these topics, about 2,000, and the references to some can be found in the Tinker survey.

Regarding the last point, A's low self-esteem increases A's persuasibility, but only when the message is non-threatening and when B's position is clear and simple. There are many such qualifications on all of the above factors, e.g. an optimum number of repetitions (about 3), and the ambiguous effect of distraction (it interrupts the sub-vocal formulation of counter-arguments as well as the reception of the message). There are also cross-interactions between two or more of the factors.

An important mechamism for attitude change and attitude spread is the existence of social networks (cf. Carolyn Sherif, 1978). This is a structure of linkages among persons, which results in a greater probability of communications and influence among its members than would occur in a random group. In such a network, a message travels along a more or less predictable path, though not necessarily accurately or efficiently. The structure of social networks can be mapped by sociometric methods (asking people whom they know, then following leads to ask the next group whom they know, and so on). The social network concept is related to the concept of "the small world": there may be surprisingly few links in a chain from person X at one end of a country to person Y at another end, even if they never met. This was discovered in experiments trying to establish communications, when X was told to get in touch with Y through any links or acquaintances X could think of. It also follows there are not that many links between an ordinary citizen and the top leader of a superpower, if one wanted to follow the chain and send a persuasive message going through acquaintances only (not by direct mail). However, this shortness of chain may be more typical of the average city-dweller in an industrialized country than of the inhabitant of a remote village in the Third World.

While the "cognitive response" approach to attitude change, which we have been following, regards people as rational problem-solvers (more or less), the other approach, that of "cognitive dissonance", deals more with impersonal psychological forces, seen almost as physical forces pushing people around. The basic idea comes from Leon Festinger (1957, 1962). The theory is that, when there is dissonance between a person's actions and his/her beliefs, (or observations or expectations), and when the actions or observations are irrevocable, the person's beliefs or expectations will tend to change so as to reduce the dissonance. The underlying assumption is that there is a basic drive in people's minds to reduce dissonance to the lowest possible level, just as physical systems tend to the lowest possible levels of potential energy.

As an idea, this is only an analogy or a metaphor; however, it has received considerable experimental support, and it must be taken seriously. Examples: (1) When a person makes a choice between two equally attractive objects (a child choosing toys, an adult choosing a marriage partner or a career), the tendency after the choice (if irrevocable) is to see the chosen object as more attractive than before and the rejected object as less attractive than before. An experiment with high school girls choosing records shows that this "dissonance reduction" occurs only when the outcome is certain and the choice is irrevocable. (2) When a person tells a lie which cannot be revoked, he/she tends to reduce the dissonance between public statement and private belief by coming to believe the (false) statement. If a student is forced to write an essay espousing views contrary to his/her own, there is a greater tendency to attitude change in the direction toward the (falsely) expressed view if the student is paid a small amount of money for writing the essay than if he/she is paid a large amount. This is because the smaller payment gives less justification for saying something untrue, or contrary to one's beliefs, and therefore the dissonance is greater. (3) When resisting temptation, a person can come to regard the tempting object as less desirable (the "sour grapes" effect) when the threatened punishment is mild (and therefore dissonance great), or as more desirable when the threatened punishment is severe (and therefore the person can justify to himself not going after it). This is shown by experiments with children and toys. It is also revealed by common experience.

The relevance of cognitive dissonance to attitude change is obvious: if people are somehow induced to make statements contrary to their beliefs, without being highly rewarded for doing so or highly threatened for not doing so, they may change their beliefs in that direction. National leaders often speak of their commitment to peace and justice, and some would label this "hypocrisy". However, possibly such talk should be encouraged, because one day the discomfort of cognitive dissonance may induce them to "close the hypocrisy gap" and come to believe, and act on, their own words.

(3) Critical or Radical Peace Research

Although quantitative-behavioural peace research began only around 1960, already in 1969 it was being attacked by adherents of a "New Left" orientation. The critique began with an article by Herman Schmid (1968), which argued that peace research, by applying integration-type conflict management theories to conflicts seen essentially as symmetrical, and trying to be scientifically"objective" regarding the conflict parties, has become an agent of pacification, a pillar of support for the status quo; and this is reinforced by appealing to top leaders to change top decisions instead of speaking to the people; and even by being dependent on government authorities for research funds. Schmid argued that peace research (which may have to change its name to "radical research") should aim at polarization (increase in "creative conflict", i.e. confrontation) in unsymmetrical conflict, and explicitly support the weaker party, i.e. the oppressed. We should not advocate compromise or reconciliation between a master and a slave.

Dencik (1969) joined the debate by distinguishing between subjective conflict (conflict behaviour or hostile attitudes) and objective conflict (real situational conflict of interest). This leads to 4 types of conflict in a 2x2 matrix: manifest conflict (both s and o), mystified conflict (only s not o), latent conflict (only 0 not s), and resolved conflict (neither s nor o). Alternatively he calls these realistic war, unrealistic war, unrealistic peace, realistic peace. The only path he sees to realistic peace is to first transform latent conflict into manifest conflict, i.e. through revolution.

Radical peace researchers have widened the concept of

"violence" to include "structural" as well as "direct" (personal, behavioural) violence. This was done by Dencik (1969), Galtung (1969 a,b, 1972 a,b, 1973, 1975, and elsewhere), as well as many others. Direct violence, the type usually dealt with in peace research, is direct, personal, intentional, sudden killing, as in wars or revolutions; while structural violence is the slow, impersonal, unintentional killing through shortening of the life span by preventable starvation, disease, poverty induced by the social system. Even more widely, violence is defined as "anything avoidable that impedes human self-realization" (Galtung 1975), or "when human beings are being influenced so that their actual somatic and mental realizations are below their potential realizations" (Galtung 1969a). In this even wider formulation, death need not result from violence, only decreased performance. We indeed include this for direct violence, where we would count injury as well as death as being the result of violence.

The idea of "structure" was always prominent in Galtung's thought, but became especially so after Schmid's article stimulated him to join the ranks of the radicals. He then formulated "structural theories" of many things: of aggression (1964a - this one predated Schmid's revolution); of imperialism (1971), of integration (1968), of revolution (1974), of disarmament (1967). "Structure", to Galtung, usually means a stratification, e.g. of regions into "centre" and "periphery", or of actors into "topdogs" and "underdogs". Out of this stratification arose his theory of "rank disequilibrium" or "status imbalance" as a source of conflict: when a person or a nation is high on one status dimension (e.g. education or economic growth), but low on another status dimension (e.g. social position or prestige and recognition), that person or nation tends to be frustrated and therefore conflict-prone. One might add, though Galtung did not say so, that this is especially true if one is high on achieved status and low on ascribed status. This theory has been used by others in international relations research. (Cf. Galtung 1964b for first mention of centre-periphery, Galtung 1969b for perhaps the first mention of topdog-underdog).

Symmetric conflict between topdogs, or between underdogs, requires a different conflict resolution strategy than does unsymmetrical conflict between a topdog and an underdog, according to Galtung (undated). An associative (integrative) strategy is appropriate for symmetrical conflict (as usually advocated by

peace research), while a dissociative (self-reliance) strategy is more appropriate for asymmetrical conflict. (This is a different prescription for treating asymmetric conflict than Dencik (1969) offered, namely revolution. Separation of the conflict parties at least has the merit of remaining nonviolent in the traditional sense). Galtung (1976) applied this idea to the economic relations between industrialized and developing states, in advocating "self-reliance"(separation from the predominant world trading system) for the latter. This is in line with many theorists of the "dependencia school; this vast literature cannot be reviewed here, but it is obviously connected.

Some empirical estimates of the fatal consequences of structural violence in a single year (1965) around the world were given by Köhler and Alcock (1976). The method of Galtung and Hoivik (1971) was adapted for this estimation; it is based on life expectancy data in various countries. Köhler and Alcock calculate the results of structural violence for all countries in 1965 by comparing their average life expectancies either to the "Swedish model" (life expectancy in Sweden, the highest in the world), or to the "egalitarian model" (life expectancy that would exist if present total wealth in the world were equally distributed among all countries); the latter estimate is the lower one, but they are not too far apart. The world totals were: 14 to 18 million deaths from structural violence, 92,000 deaths from civil wars, and 11,500 to 23,000 deaths from internal violence. Total deaths in 1965 were 62 million. Thus structural violence, under this definition, claims a much higher number of victims than direct violence (civil or international) and the former is a considerable proportion of total mortality in the world.

Also, the underdeveloped South, with 69% of the world population, suffered 96% of the world's structural violence, 99.9% of the world's civil violence, and 91% of the world's international violence, in 1965.

Köhler and Alcock (1976) also plot the curve of average life expectancy for a country against that country's GNP per capita. For the poor countries (up to about $600 per capita), every additional 7.68% increase in GNP per capita produced one additional year of average life expectancy; but for the rich countries, above this threshold, the curve flattens out, until it almost

reaches a plateau for the richest countries. This is "the economic law of life". It shows that economic equalization of all countries would give large gains in life expectancy to the poor, at very little cost in life expectancy to the rich. This law of of life was further applied to world betterment proposals by Alcock et al (1978) and by H. Newcombe (1983).

(4) Policy Proposals Based on Peace Research

The world lives under a day-to-day threat of military destruction. Threat, according to J.D. Singer (1958), is the product of capability (armaments) and intent (hostility). If either capability or intent becomes zero, the threat too disappears. This means that we can diminish the threat to the world (i.e. make an approach to peace) either by decreasing capability (disarmament, arms reduction), or by diminishing hostile intent (improving international relations: mainly East-West relations, but also those in local conflicts, especially along the "fuse" chain of nations in Africa, Middle East, and Asia).

K. Boulding (1969, 1978) drew a diagram with these two dimensions: capability (arms) on the vertical, intent (hostility) on the horizontal. The area near the origin (low arms, low hostility) is defined as "stable peace"; the next intermediate area is the belt of "unstable peace" (mainly peace, with occasional war or threat of war), the next belt is one of "unstable war" (mainly war, but occasional peace); and finally, at high armaments and high hostility, there is a zone of "stable war". Examples might be: Scandinavia or OECD for stable peace, the East-West confrontation in Europe as unstable peace, the Middle East as unstable war, and Southeast Asia as stable war.

We shall take these two components of threat in turn, and list some proposals that have been made to deal with them. In general, decreasing capability implies arms control and disarmament, verification, and peace-keeping; decreasing hostility means tension reduction, conflict resolution, and dispute settlement. It seems that these "elements of peace-making" have to go on simultaneously if good progress is to be made.

(a) Disarmament

Arms control has already achieved 17 bilateral or multilateral treaties; but some of them are of the "non-armament"type (not putting weapons of mass destruction into Antarctica, outer space,

the seabed, or Latin America, where they have never been before and no one intended to put them there), some concern mechamisms for the prevention of accidents (the "hot line" agreement), and some ban testing in certain environments (partial ban on nuclear weapons tests). Some of the bilateral (SALT) series are arms limitation agreements, which means putting a quantitative ceiling on certain types of weapons, the ceilings being higher than the levels then existing. The only treaty which actually meant arms reduction was the treaty on biological weapons. No treaty has banned qualitative "improvements" of existing weapons, and only one (against environmental warfare) has tried to ban a wholly new class of weapons.

In view of this spotty record, much more must be done on reduction and prevention. The Final Document of the First U.N. Special Session on Disarmament in 1978 formulated a set of priorities: first, slow down, stop, and reverse the nuclear arms race; achieve total nuclear disarmament; abolish other weapons of mass destruction; reduce conventional weapons (beginning with the excessively cruel ones) and armed personnel; achieve general and complete disarmament. The Document also stipulates that we need not wait for the achievement of one step before beginning on the next, but the scale of priorities is clearly stated. While UNSSOD II failed to achieve progress on the Comprehensive Programme of Disarmament, which would have put some time frames on this plan, it did approve the 1978 Document, so that priority scale still stands.

In reducing nuclear weapons, the first step would seem to be a bilateral verifiable freeze, both quantitative and qualitative, on deployment, testing, production of nuclear weapons and their carriers, and on research and development concerning them. This would be the stopping of the nuclear arms race, which must logically precede its reversal; but it would be only a first step. The reductions (mutual, balanced, verified) should then proceed to to "overkill = 1", which would be a very deep cut, since present overkill levels are reported to be 20 to 50. George Kennan (1981) has already proposed a 50% cut. This should be followed by another deep cut to "minimum deterrent" levels, of about 100 single-warhead missiles per side; to any reasonable person, the loss of 100 cities is totally unacceptable damage. The final cut,

to zero nuclear weapons, would require rather more extensive and intensive verification than any other, because the illegal retention of a few missiles by only one side could be highly destabilizing in this range. More will be said about types of verification later.

In general, arms reduction can be of several types. We spoke above about reducing particular weapons, namely nuclear. Alternatively, one could speak of reducing all mass destruction weapons, all offensive weapons, all excessively cruel weapons, etc. Another way to reduce is by general reductions in all types of weapons across the board, which could be achieved by budgetary reductions; U.N. experts are working out economic-type verifications of military budgets, e.g. by input-output methods (cf for example Leontieff and Duchin, 1983). Another way is to reduce areas where weapons (or only nuclear weapons) are allowed; this means demilitarized zones or "zones of peace", like Antarctica, or the proposal for the Indian Ocean; or nuclear-weapons-free zones, like Latin America, or proposed ones in the Pacific, the Middle East, Central Europe, Africa, the Arctic, Scandinavia, or Canada. One can reach zero levels by the geographic route too, simply by expanding the zones gradually. Zonal disarmament and verification plans, a variant on this theme, were reviewed recently by H. Newcombe (1982). One can also limit the nations allowed to possess certain weapons to present holders (non-proliferation), but that is not really reduction. unless the present holders take on a binding obligation to discard the weapons themselves in a definite time-frame. Finally, it would be possible to limit targets, e.g. give "negative assurances" to non-nuclear-weapons states, or exclude civilian populations in cities which have no military targets; but the latter would interfere with deterrence; we may all have to remain "hostages" for the sake of balance until we reach zero.

The International Peace Research Association, (IPRA) made detailed recommendations on disarmament to UNSSOD I in 1978 (IPRA, 1978). After a thorough survey, and making explicit the causes (as well as the nature) of the arms race, and its links to the "world military order:, it makes recommendations on demilitarization, not only in nuclear but also conventional weapons, including "no first use" and "no use" declarations of particular weapons. It also stresses the economic conversion to peaceful

production, and links between militarization and repression (human rights violations) and maldevelopment. IPRA has also prepared a statement to UNSSOD II, stressing similar points.

A Working Group of the Canadian Institute of International Affairs (1982) made a milder sort of proposals for Canadian initiatives at UNSSOD II. There were 24 recommendations, including a treaty to ban the testing of anti-satellite weapons, "no-first-use" declarations by all parties regarding nuclear weapons, support for nuclear-free zones and zones of peace, "negative security assurances" to non-nuclear-weapons states, comprehensive nuclear test ban, a nuclear-weapon-free zone in the Arctic Ocean, creation of an International Satellite Monitoring Agency, chemical weapons, conventional arms sales, and confidence-building measures.

The CPRI team that wrote the book "1982" specifically for UNSSOD I in 1978, thinking that it would take an agreement in 1978 to start actual arms reductions in 1982, proposed a phased disarmament plan of 10% reductions (budgetary) over a long period of years. The belief was that the direction we are taking is even more important for creating a favourable climate than the absolute size of the achievement. The reductions would be coupled with increases in Third World development aid, where this would in turn help de-fuse potential crises that feed on poverty. Scenarios were presented, with computer calculations, showing how this would be a decisive turn from the present disastrous course.

(b) Verification of Disarmament

Unless nations are willing to trust each other regarding compliance with disarmament treaties (and they are not), there has to be verification, either international or mutual. A compendium of arms control verification proposals has been prepared at the Canadian Department of National Defence (Crawford et al, 1982). The abstracts presented there are divided into 15 topics, such as general or selective on-site inspection, progressive zonal inspection, records monitoring, psychological inspection, remote sensors, seismic sensors, etc. H. Newcombe (1982) has reviewed a few of these topics, especially progressive zonal inspection, psychological inspection, and satellite monitoring. Space allows only sampling in this paper, and so we will mention only these three topics, since they span the field from

high (hard) technology to soft technology.

Progressive zonal inspection has been proposed many times (see references in Newcombe 1982), but let us examine only those of Louis B. Sohn (1961, 1962a, b). The method was designed to solve the problem in superpower negotiations, in which the U.S. wanted disclosure and inspection before disarmament, while the USSR wanted disarmament and then inspection. The zonal method tries to "fractionate" the problem by doing both disarmament and inspection one geographic zone at a time; this would make the degree of inspection of retained armaments proportional to the degree of disarmament. Each country would divide its territory into a specified number of zones, and submit to the International Disarmament Organization (IDO) an inventory of armaments in each zone - numbers only, not locations. The other side would pick a zone to be inspected. (This is the "cake-cutting principle": you cut and I choose). Then the first country must reveal the locations of the weapons in this zone; IDO inspectors would immediately seal the borders of the zone to prevent transfers, and then move freely to inspect the zone. The zone would then remain open for all subsequent stages. This process would then be repeated for the other country's zone, and then alternate zones from each country would be opened up until completion. The weapons would be either destroyed or converted, or could be retained openly if the treaty permitted this. - There are variations on this method. The variant described is called the selective method; the alternative is either the systematic method, in which the sequence of zones is predetermined, and the random method, in which the zones are chosen by lot.

Psychological inspection, one of the "soft technology" methods, can be quite intrusive, and therefore contrary to human rights considerations. It uses methods such as lie detector tests in interrogations of plant personnel, subliminal stimulation of the brain, pharmacologically induced psychoses, sensory deprivation, mind-altering drugs, hypnosis, even implantation of electrodes in the brain to release "memory tapes" which make the subjects relive details of their past experiences. Such methods are called collectively "guilty-knowledge detection", and it is not desirable that they should be adopted for disarmament verification, since this could easily get out of hand and be misused.

The second "soft" method is the one to recommend, since it

would not violate human rights and would appeal to the moral conscience of the people instead. It has been called "inspection by the people", and is based on the fact that any disarmament treaty violation large enough to matter would be a big project, and a large number of people would have to know about it to carry it out. Therefore, people should be officially encouraged to tell the inspection agency if they know of any violations. To make such reporting on your own government "legitimate" in people's eyes, a solemn announcement should be made publicly at the time when the new treaty is first announced, and each government itself, not only the inspection agency, should urge the people to report any violations known to them, as a civic duty. By requiring the governments to do this, the inspection agency would make its task easier, and both contracting governments would increase their confidence in the other's good intentions. Even so, the anonymity of the informer would have to be protected, to prevent possible retaliation by the government. This could be done in several ways, but one attractive method is as follows: At regular intervals, every adult citizen would be asked to deposit a piece of paper in a ballot box; most papers would be blank, but a few may have information on them; these could then be read by the inspectors, rejecting the crank messages and following up the few important leads that might emerge. No one would ever know the source of the information that led to detection of a violation. - In case of a violation between the regular reportings, if the matter was urgent, the citizen could report to the inspectorate and then ask for asylum. But this would be only an emergency measure.

At the high technology end, we have photographic reconnaissance by satellites. This is done routinely now by the superpowers, but the proposal is to internationalize this, so that all nations could have access to the information. The government of France proposed this to the U.N. General Assembly in 1978, and the project, not yet approved, is called the International Satellite Monitoring Agency (ISMA). It would be a relatively larger expense than the U.N. is used to, but not so large as to be unmanageable; the cost would be well worth it. A similar principle would apply to such early detection installations as the DEW line, which also should be internationalized and face both ways.

There are some weapon systems or parts of them that satellites cannot easily detect: warheads in storage, MIRVed missiles (the uncertainty of how many warheads there are per missile), stored missiles at a launch site (normally only launchers are counted), and finally cruise missiles. It would seem that satellite monitoring would have to be supplemented by other methods, and "inspection by the people" may be the ideal supplement. Thus, even with new difficult-to-detect weapons going into deployment, we need not despair and close up shop; but we may have to look for effective verification in unexpected quarters - not in high technology at all, but in the conscience of individual citizens. In several countries, questionnaire studies found that a reasonable proportion of people said that they would report violations; and, of course, not everybody has to be prepared to do so, as long as the proportion is high enough to feel confident that one of those willing is likely to be employed on any secret violation project.

(c) Peace-keeping

The existing U.N. peace-keeping system needs to be strengthened, especially if disarmament proceeds, because peace-keeping forces would then be relied upon more and more to provide alternative security. A few such measures are: (1) The peace-keeping system needs to have assured access to the area of conflict, assured finances, and assured military units. (2) It needs to have a continuity of accumulated experience, at least a permanent general staff, preferably a small standing force. (3) It should be empowered to go into action automatically, under predetermined conditions (e.g. a threshold of violence). (4) It must be tied in with peace-making, i.e. pacific settlement of disputes. (H. Newcombe 1983). - The "automatic action" requirement may be the most controversial, but it is important. Too many times in the past, the U.N. Security Council or General Assembly has debated endlessly while the battles continued. Sometimes the delay was deliberately engineered by nations friendly to the winning side. This surely is an intolerable situation for an international force.

An up-graded peace-keeping force is described in Alcock et al (1978) and in Alcock and Simoni (1983). In both cases, the main author of the idea is Arnold Simoni. This would be a permanent new semi-autonomous agency (associated with the U.N., but with its own separate administration), which would supervise bilateral agreements

specifically concluded between nations who joined. The agreements would include action criteria (e.g. border crossed, military forces mobilized - or an earlier warning sign) under which the force would go into action automatically, without any deliberation. The force would therefore need reliable source of information (intelligence) of its own, to know when the action criteria have occurred. It would be strictly a police force, not a military force, acting only to prevent violence, not to conduct it. It would be strictly impartial. It would, of course, be a multinational force, composed of citizens of middle powers and smaller nations, in proper balance between East and West, North and South. When not in action, the force would be regionally dispersed, so that some of its forces would always be close to any possible scene of future action. The superpowers wouldn't be allowed to be members, but would have to approve of the creation of the force, partly because they would have to cooperate in the financing of it through the United Nations.

(d) World Peacemakers Association of Nations

The semi-autonomous peace-keeping agency described above fits in well with the WPMAN, or PAN (as Alcock and Simoni, 1983, call it). This grouping of middle powers from East and West, North and South, would specialize in providing peace-keeping and peace-making services for nations in trouble, and would also start the process of disarmament and transfer of funds so saved to world development; they would also provide mediation services, and pledge not to use their armed forces outside their borders for any other but peace-keeping purposes; this might require some changes in existing defensive alliances, but in a balanced way on both sides.

The WPMAN idea has been around for some time in Canada, and is usually coupled to the proposal that Canada would take the initiative in forming such a new trans-regional grouping. It has formed the content of 3 different briefs from the World Federalists to the Canadian government over the years. Not surprisingly, the idea has taken on somewhat different forms, depending on who the authors were of each version. H. Newcombe (1983) differs from Alcock and Simoni (1983) in the stipulation that WPMAN would serve as peace-keeper and/or mediator for non-member nations as well as member nations. The nations likely to need such services are most likely to come from the "fuse" chain of

nations already mentioned several times; while the WPMAN members should be those with low tension ratios and high on "international compassion", as specified by Alcock and Simoni (1983); perhaps Sweden, Canada, New Zealand, Rumania, Austria, Ireland, Burma, Sri Lanka, Finland, and Yugoslavia. None of these nations are "fuse" nations, and none are candidates for international conflict. A second difference between these two versions of WPMAN is that H. Newcombe would have the peace-keeping force intervene in internal wars too, while Alcock and Simoni would not. The third difference is the already mentioned feature of the "pledge" of no external use of force, which makes the H. Newcombe version less compatible with NATO and WTO than the Alcock and Simoni version.

Another version, by Alan and Hanna Newcombe (1983), a modified version of a WFC brief, is "modular" in form, which means that certain provisions are "central" and others are "optional". One of the modules, essentially authored by A. Newcombe, would have WPMAN provide collective security for its members against external attack. Yet the WPMAN would be different from the usual defensive alliance by not having a predetermined enemy.

The latest version by Alan Newcombe (1983) would give the collective security guarantee to the mini-nations, some of whom in recent years have been subject to attack by bands of roving mercenaries, not even an organized foreign military force. Therefore, there might be a demand for such a banding together of the mini-nations (e.g. Caribbean or Pacific Islands) for mutual protection, regardless of ideological differences.

(e) Tension Reduction

In the usual discussions of disarmament, verification, and peace-keeping, the emphasis is on weapons hardware, or police forces, or legal and institutional arrangements. However, attention must also be given to the psychological, perceptual components, which are often left out. Nations perceive each other as enemies; this stimulates hostile feelings, and builds up tension, and may generate offensive or defensive aggression (intent to use force). We must address the problem of how these tensions can be de-fused, or disarmament agreements will never be made, and peace-keeping forces will never be created; nor will international organizations be strengthened.

We leave to one side here the actual substantive resolution of particular conflicts, which will be discussed later. We also leave aside so-called "confidence-building measures", which are military in nature (e.g. being invited to watch each other's maneuvers). We should say a word about such "declarations of intent" as no-first-use pledges, non-aggression pacts, and non-intervention regimes. Such pledges do decrease tension, and are therefore useful, but are not verifiable (how would one verify intent?), and therefore lose some of their effectiveness in situations of high tension. For example, President Reagan simply brushed off as "propaganda" the Soviet pledge at the U.N. in 1982 never to be first to use nuclear weapons. A very useful proposal regarding a non-intervention agreement was made recently by Robert Johansen (1983). The U.S. and USSR could offer (even without prior negotiations) to refrain in the future from sending any armed forces into any non-aligned country, even if invited, in return for a promise from the other superpower to show similar self-restraint. Such an agreement would have kept the U.S. out of Vietnam and the USSR out of Afghanistan. The agreement would be self-enforcing; if either side breaks it, the other would simply not be bound by it either. There would be no question of not detecting the violation.

There are three main topics we wish to discuss in relation to tension reduction, and all three are based on peace research studies. In order to do them justice, we will devote separate sections to each one of them.

(f) Graduated Reciprocation in Tension Reduction (GRIT)

We have already alluded to the fact that the non-intervention regime could be introduced by either superpower initiating it, without prior negotiations, and challenging the other to reciprocate. This is the basic idea of GRIT; it is an alternative to negotiations when negotiations would be too slow; and this is nowhere more true than in disarmament negotiations. It is also a "peace race", an attempt to run the arms race backwards. After all, we increase armaments unilaterally, without negotiations, and the other side always seems to reciprocate; could this mechanism not work equally well in reverse?

The initiator of the GRIT idea is Charles Osgood (1962). GRIT

writings by Osgood and others have been reviewed by H. Newcombe (1983). A collection of the most important articles on GRIT have been reprinted by A. Newcombe (ed., 1979). The rules for properly operating GRIT are spelled out by Osgood (1961): (1) Maintain security: Initiatives must not impair basic retaliatory capacity. (2) Initiatives should be graduated in risk, diversified in nature, and unpredictable before announcement. (3) Induce reciprocation: make a public announcement, identify the act as part of deliberate policy, explicitly invite reciprocation. (4) Plan for the long range; design steps of increasing importance; continue over a long period; acts should be overt deeds, not bans, not promises - unambiguous and susceptible to verification. (5) Balance risks against gains expected in reciprocation; balance steps taken in one area with those in another area, military with non-military initiatives. (6) Don't require prior commitment to reciprocation; don't try to negotiate the sequence with the opponent. (7) Acts should be imaginative and highly visible. (8) Don't mix disarmament initiatives with military threats - this would result in psychological confusion and fail to reduce tension. (9) Stay flexible, although you have a basic long range plan; respond and react to the opponent's moves.

In adopting a GRIT policy, it is wise to follow these rules. Sometimes they are broken; people try to negotiate the moves beforehand, or make moves that are unverifiable, or remove only obsolete weapons, or threaten (either reciprocate, or we will escalate again). This does not work too well. On the other side, some peace advocates want to carry unilateral initiatives all the way to unilateral disarmament, which is far too risky and breaks Osgood's first rule. On the other hand, there have been, historically, examples of successful application of GRIT; e.g. between Kennedy and Khrushchev in the early 1960s (cf. Etzioni, A., 1967/69). The Soviets understand GRIT, but call it "the policy of mutual example".

(g) Superordinate Goals

Since "enemy images" that cause hostility are often based on "projection" and dehumanization, we need to seek ways to make adversaries appear human to each other: not monsters, not beasts; not either unspeakably cruel or uncultured and stupid; but of the same human essence as ourselves. One way to do that is cultural exchange on a basis of equality (the subject of the next section),

another is to behave nonviolently and with dignity (Gandhi's way), a third way is to work shoulder to shoulder -- which we explore in this section.

A superordinate goal is more than just a common goal - though working on the latter may reduce tension too. A superordinate goal is such that it cannot be achieved at all unless both previously antagonistic groups work together; and secondly, it is a goal that must be achieved in order to satisfy some basic need of both groups. The cooperation is thus forced by the situation; one cannot escape it. However, in small-scale experiments it can be contrived, and it is from such experiments that we learned how important this mechanism can be in turning antagonistic groups into mutual friends.

The experiments were carried out by M. Sherif et al (1961, 1964, 1966) in a boys' camp called "Robber's Cave". Two separate groups of 11 to 12-year old boys were formed, and allowed to develop their own status differentiations and internal cohesion; a micro-society, in fact. Rivalry between the two groups was then induced by setting up a series of sport competitions. The rivalry even broke out into fights, burning the other side's flag etc. The experimenters, as camp directors, then tried various ways to reduce the hostility. Pleasant social contacts in non-interdependent situations only served to provide occasions for attacks. Leaders of the groups who tried for negotiations ("summit meetings") were greeted with distrust by the opponents and rejected as traitors by their own group. It was only when superordinate goals were introduced (the pipes that brought in the water supply broke down, or the bus got stuck in the mud) that the group stereo-types vanished and the conflicts ceased.

How applicable is this to international relations? When U.S. and Soviet astronauts met in space, that was a common goal, not a superordinate goal. A true superordinate goal would be to abolish war, but that is begging the question. Protecting the environment might be tried; or finding renewable substitutes for non-renewable resources, including energy; or seawater desalination to irrigate deserts. Some possible large-scale technical projects that might serve as superordinate goals were reviewed by Keyes and Seymour (1975).

(h) Conditions for Successful Cultural Exchange

It is not quite always true that, if we get to know people of other cultures better, we get to like them more. If conditions are unfavourable, the opposite might be true. Some foreign students in Western countries, for example, turn antagonistic when they experience discrimination because of race. The same apparently happened at Lumumba University in Moscow. Contact implies better acquaintance, but not necessarily friendship. How can we make inter-cultural contacts more successful, i.e. have them contribute to international friendship?

These conditions were stated by Allport (1958): (1) Equal status and parity of power, with all that this implies psychologically (respect, honour) and economically (equal access to resources). A stratified society, whether intra- or inter-national implies negative images, probably in both directions (topdogs to underdogs and vice versa). (2) At least common goals, if not superordinate goals (see previous section). This implies at least some congruence of beliefs and values. This is why ideological, religious, and national differences are such a powerful source of conflict - but this can be overcome (we are, after all, talking here about inter-cultural contacts), since Cantril (1965) (as discussed in a previous section) showed that people share most of their hopes, fears, and aspirations across cultures. (3) Interdependence; the different groups and nations need each other to fulfill each other's needs (trade), but also the higher needs for meaningful human contacts. After some experience, most people come to feel that cross-cultural experiences are personally enriching, even though the first contact may provoke xenophobia through culture shock. (4) Some positive sanction for the contact, such as the approval or support of some authority, either legal or a "reference group" or "role model". This is a conformity factor, and we all have some measure of it, and need to feel social approval for what we do, unless we are exceptionally strong personalities.

(i) Conflict Resolution and Dispute Settlement

Since most conflicts have a realistic component (objective conflict of interest or dissensus on values), and are not due only to misunderstandings, misperceptions, and group stereotypes, a decrease in the hostility component of threat requires down-to-earth negotiations and bargaining about issues. Third parties

can often help, through good offices, mediation, conciliation, arbitration, or judicial (court) settlement. (The processes in the previous sentence form a scale, from hardly any power of the third party to decisive power). These are old, well-known methods though they should be used more among nations. Many observers feel that the United Nations should require a compulsory sequence from negotiation to court settlement (along the scale just outlined) for all nations in disputes, just as Labour Relations Boards do for parties in industrial conflicts. "Cooling off periods" would not be a bad idea either, to ease off the "information overload" in crises.

However, there are also some new methods of handling disputes that should be considered. All methods, old and new, were reviewed by Bailey (1970) in a UNITAR study. Besides the traditional methods, he also mentions: (1) Analogous studies, e.g. of labour disputes and marriage counselling. (2) Contributions of the social and behavioural sciences, such as GRIT (see a previous section) and (3) "controlled communication" workshops, a subject to which we now turn.

The controlled communication workshop method of conflict resolution was pioneered and elaborated by John W. Burton (1969), and picked up and modified by Leonard Doob (1970) and Herbert Kelman (1979). A workshop consists of sessions, for a week or more, of a group of conflict participants (people from both sides of a conflict; not top leaders, but close enough to the top to be highly involved), who know nothing about conflict theories, and a group of social scientists, who know conflict theories but do not specialize in the conflict under discussion. The conflict parties are encouraged to explain their positions, and the social scientists then come in with theoretical conflict interpretations and possible conflict resolution mechanisms. The workshop is not a negotiating session, only a clarifying session. Greater understanding of the conflict process (and the process has common features in many different conflicts) causes the conflict parties to distance themselves sufficiently from the immediate issues as to see themselves more from the outside, as the social scientists see them. This promotes a problem-solving approach, rather than the usual legalistic or normative approach (deciding who is in the right). This has been successfully used in several real-world conflicts: Ethiopia-Somalia over Ogaden, Northern

Ireland, Arab-Israeli. "Success" here means that the conflict-party participants acquired a new view of the conflict, but they were usually not able to transfer their insights to their colleagues who had stayed at home, and so the real-world conflict continued. Increased exposure of more people to the workshops would be required for complete success.

(j) Alternative International Security Systems

Traditionally, nations have derived their security from armaments. If this is to change, new security systems will have to be devised, because security is and will remain a basic human need. First of all, we can re-conceptualize security, in three directions: (1) From national security to global security. As Roger Fisher aptly remarked "we cannot make our end of the canoe more steady by making their end of it more tippy". (2) From national security to people's security. We are then talking about the survival, in freedom and dignity, of populations, rather than primarily of safeguarding national territory and independence. (3) From purely military security to comprehensive security, including economic, resource, environmental, etc. Dangers to our populations come not only from external human enemies, but also from various forms of economic and ecological mis-management.

Alternative forms of security would consist of the elements we have already discussed: disarmement with verification, international peace-keeping, tension reduction, and conflict resolution: but put together into comprehensive inter-locking systems, and with a few other features added, especially some measures of global economic and ecological planning (these problems cannot be discussed here), and much better observance of human rights. In the World Order Models Project, the 5 basic values or goals are: prevention of violence, economic welfare, social justice, ecological balance, and democratic participation. A series of books have been written on these themes by scholars from different regions of the world. (Falk 1975, Galtung 1979, Kothari 1975, Lagos and Godoy 1977, Mazrui 1976, Mendlovitz 1975, Sakamoto 1980/81). These books are meant to reflect the viewpoints of the different regions and cultures, regarding the implementation of these values in a future world.

Among the many other books contributing to this genre are Johansen (1983), Stephenson (1982: an edited volume to which she

contributes a valuable literature survey), G. and P. Mische, and H. Newcombe (1982, 1983).

The two basic alternatives to military violence are world government and Gandhian nonviolence. They may be compatible, but usually they are advocated separately, even antagonistically at times. In concluding this paper, we shall take a brief look at some research-based approaches to these two themes.

(k) World Government or Strengthened United Nations

Fifteen alternative approaches to world government (U.N. Charter revision, people's constitutional convention, partial or regional federation, a disarmament organization separate from the U.N., gradual expansion of international law, mundialization of cities, world citizens movement, development through U.N. peace-keeping forces, the functional approach, internationalism in non-political areas like science or religion, drafting world constitutions, working through specialized groups like parliamentarians or educators, initiatives by non-aligned nations, world federalist political parties, and a world language like Esperanto) were reviewed by H. Newcombe (1967, 1974). In addition, H. Newcombe (1980b) has also compiled over 500 abstracts of articles and books on world government and related topics. Future supplements are planned.

One of the most influential books in this field has been written by Clark and Sohn (1958). It gives detailed paragraph-by-paragraph revisions of the U.N. Charter, designed to create a limited world government. Reasons and explanations are given for the changes suggested. There are annexes on disarmament (a 10-year phased plan), a U.N. peace force, the judicial and conciliation system, the world development authority, the revenue system, privileges and immunities, and a bill of rights.

Among "maximalist" world constitutions, two deserve mention: the Chicago Constitution first drafted in 1948 and later republished (Borgese 1965), a scholarly document compiled by a group of dedicated philosophers, historians and legal scholars at the University of Chicago, to combine the best features of many ancient and modern constitutions from many regions and cultures; and The Constitution for the Federation of Earth (World Constituent

Assembly, 1977), a long, detailed tri-cameral constitution, compiled by a non-governmental body of activists working for speedy acceptance and implementation of this document. Among plans that do not take the form of a constitution draft, we might mention Anker-Ording's "Three Stages of Possible U.N. Development" (1973), John Roberts' "25 Years to a Governed World" (1975), and Guy Marchand's "Mundialist Summa" (1977).

One of the details of proposed reforms of the U.N. has concerned weighted voting schemes in the General Assembly and the Security Council. Twenty-five weighted voting formulas proposed by various authors have been tested by 8 criteria in detailed calculations by H. Newcombe (1983); the criteria included political balance between the main voting blocs. The best formulas were those using two factors, population and, as the second one, either GNP, or U.N. assessment, or energy consumption, or health and education expenditure. The same formulas were also tested, in a computer study, against the past voting record of the U.N. General Assembly (H. Newcombe and T. Mahoney, 1983). Schemes proposed for reforming the composition and voting arrangements for the U.N. Security Council were reviewed in another study by H. Newcombe (1979).

(1) Nonviolence and Non-military Defence

If the violent waging of conflicts is to be eliminated and legal or governmental structure at the global level are considered too oppressive and centralizing, the alternative is to continue fighting for social justice by nonviolent (though sometimes extra-legal) means. This would include resistance to an occupying military force of one's own country, by a citizenry highly trained and disciplined to fight by Gandhian methods; resistance to a tyrant or usurper who seized power illegitimately; nonviolent direct action to obtain social changes (e.g. racial justice), and resistance to genocide attempts. The method can be highly effective, as has been documented by numerous historical case studies (Sharpe 1969); for example, in Czechoslovakia in 1968, nonviolent resistance by the population (even without previous training) kept the Soviet army from attaining its goal (finding a new puppet prime minister) for 18 months. Violent resistance would have collapsed much sooner in this case. Other well-known examples are: the resistance of Norwegian teachers to the Nazis in World War II, Gandhi's successful effort to obtain independence

for India, and the resistance by Solidarity in Poland, whose outcome is not yet known. Even the Iranian revolution in 1979 was in the beginning largely non-violent; the Shah was forced to leave simply by the huge demonstrations in the streets. The American independence movement before 1776 almost obtained its goal nonviolently; it was only at the end that war broke out.

Sharpe (1978, 1982) maintains that people, even children, know well how to use passive resistance, and that such tactics and strategies come to us naturally. The tactics exist in many variations: he has enumerated 198 of them, and classified them.

Nonviolent resistance does not require pacifist convictions or heroic dispositions; ordinary people can do it, if morale is high enough. The concept of non-military defence differs from military defence in defending the structures and values of the society, rather than the territory. The idea on which the concept is based is that the normal obedience of the people toward government authorities is based on a tacit contract, and the obedience can be withdrawn for a good cause. The government, or occupying power, will then be essentially helpless; they can kill large numbers of people, but cannot rule the country for their own benefit. "You can do everything with bayonets except sit on them".

It is not certain that nonviolent defence works in all cases; but then, neither does violent defence. Both depend on national morale and determination. In any case, fatalities and casualties would probably be lower in nonviolent defence, though large losses must be realistically expected. There have been moves to include a nonviolent defence component in some nations' regular plans for armed defence; this has been studied though not accepted, in Sweden and the Netherlands.

Conclusions

This has been a sketchy review of peace research, but has tried to touch upon the main points. Has the effort of over 20 years been successful? Results have been substantial from a scholarly point of view, but war has not been stopped or even diminished. Only the future will tell whether such a partial success is sufficient.

REFERENCES

Adorno, T.W.; Frenkel-Brunswick, Else; Levinson, D.J.; and Sanford, R.N., "The Authoritarian Personality", Harper, New York, 1950.
Wiley, New York, 1964, 632 pp.

Alcock, Norman, "The Prediction of War", Canadian Peace Research Institute, Oakville, Ontario, 1972, 18 pp.

Alcock, Norman, "Freedom and Equality Among Nations", Peace Research, July 1974.

Alcock, Norman, "The Logic of Love", CPRI Press, Oakville, 1976, 152 pp., Especially Chapter 7.

Alcock, Norman; Eckhardt, William; Kemp, Anita; Köhler, Gernot; Newcombe, Hanna; Restivo, Valerie; and Simoni, Arnold, "1982", CPRI Press, Oakville, 1978, 184 pp.

Alcock, Norman, "The Prediction of War", In: "Peace and Violence: Quantitative Studies in International and Civil Conflict", edited by Anita Kemp, HRA Flex Books, Human Relations Area Files, New Haven, CT., 1980, pp. 56-80.

Alcock, Norman; and Simoni, Arnold, "The Peacemakers Association of Nations", CPRI Press, Huntsville, Ontario, 1983, 28 pp.

Alker, Hayward R. Jr.; and Russett, Bruce M., "World Politics in the General Assembly", Yale University Press, New Haven, 1965, 326 pp.

Allport, Gordon, "The Nature of Prejudice", Doubleday, Garden City, 1958.

Angell, Robert C., "The Growth of Transnational Participation", Paper to American Sociological Association, August 1965 (a).

Angell, Robert C., "An Analysis of Trends in International Organizations", Peace Research Society (International) Papers, Vol. III, 1965 (b).

Anker-Ording, Aake, "Three Stages of Possible U.N. Development", International Associations, Vol. 25, No. 3, March 1973, 5 pp.

Ardrey, Robert, "African Genesis", Dell Publ., New York, 1961.

Axelrod, Robert, "Psycho-Algebra: A Mathematical Theory of Cognition and Choice, With an Application to the British Eastern Committee in 1918", Peace Research Society (International) Papers, Vol. 18, 1972 (London Conference, 1971), pp. 113-131.

Axelrod, Robert, "Structure of Decision: the Cognitive Maps of Political Elites", Princeton University Press, 1976, 404 pp.

Axelrod, Robert "The Evolution of Cooperation", Basic Books, 1984, 241 pp.

Azar, Edward; Jukam, Thomas O.; McCormick, James M.; and Cohen, Stanely H., "A Quantitative Comparison of Source Coverage for Events Data: Preliminary Findings - The Suez Conflict" Paper to Peace Research Society (International), Ann Arbor Conference 1969, Mimeo, 17 pp.

Azar, Edward, "Analysis of International Events", Peace Research Reviews, Vol. 4, No. 1, November 1970, 113 pp.

Azar, Edward E.; and Sloan, Thomas, "Dimensions of Interaction: A Source-book for the Study of Behaviour of 51 nations from 1948-1973", International Studies Association, 1975.

Azar, Edward E.; McLaurin, R.D.; Havener, Thomas; Murphy, Craig; Sloan, Thomas; and Wagner, Charles H., "A System for Forecasting Strategic Crises: Findings and Speculations about Conflict in the Middle East", International Interactions, Vol. 3, No. 3, 1977, pp. 193-222, (1977 (a)).

Azar, Edward; and Eckhardt, William, "Major World Conflicts and Interventions, 1945-1975", Paper, Canadian Peace Research and Education Association, University of New Brunswick, Fredericton, June 1977, Mimeo, 15 pp., (1977 (b)).

Azar, Edward, "Peace as Crisis and War as Status Quo: The Arab-Israeli Conflict Environment", International Interactions, Vol. 6, No. 2, 1979, pp. 159-184.

Babst, Dean V., "Elective Governments - A Force for Peace", Wisconsin Sociologist, 1964, pp. 9-14.

Bailey, Sydney D., "Peaceful Settlement of Disputes: Ideas and Proposals for Research", UNITAR, New York, 1970, 67 pp.

Banks, A.S.; and Textor, R.B., "A Cross-Polity Survey", MIT Press, Cambridge, Mass. 1963.

Beer, Francis, "Peace Against War: The Ecology of International Violence", W.H. Freeman, Spring 1981.

Berkowitz, Leonard, "Weapons as Aggression - Eliciting Stimuli", Journal of Personality and Social Psychology, Vol. 7, No. 2, 1967, pp. 202-207.

Bertell, Rosalie, "Early War Crimes of W.W III", Breakthrough (Global Education Associates), Vol. 5, No. 1, Fall 1983, pp. 1-2, 14-15.

Borden, Richard J., "Social Situational Influences on Aggression: A Review of Experimental Findings and Implications", Peace Research, Oct. 1975, pp. 97-105.

Borgese, Elisabeth Mann, "A Constitution for the World", Center for the Study of Democratic Institutions, Santa Barbara, Calif., 1965, 112 pp.

Boulding, Elise, "Creating a Vision of a World Without War", Introduction to Workshop, COPRED Conference, Philander Smith College, Little Rock, Ark., Oct. 28-31, 1982.

Boulding, Kenneth, "Conflict and Defense: A General Theory", Harpers, New York, 1961, 350 pp.

Boulding, Kenneth, "Insight and Knowledge in the Development of Stable Peace", In: "No Time But This Present", Studies Preparatory to the 4th World Conference of Friends, Guilford College, N.C. Friends World Committee for Consultation, Woodbrooke, Selly Oak, Birmingham 29, England, 1966, pp. 210-219.

Boulding, Kenneth; Newcombe, Hanna; and Newcombe, Alan, "Accomplishments and Prospects of the Peace Research Movement", Arms Control and Disarmament, 1968, Vol. 1, pp. 43-58.

Boulding, Kenneth, "The Balance of Peace", Peace Research Society (International) Papers, Vol. XIII, Copenhagen Conference, 1969, pp. 59-65.

Boulding, Kenneth, "Stable Peace", University of Texas Press, 1978, 155 pp.

Bouthoul, Gaston; and Carrere, Rene,"The Challenge of War (1740-1974): Two Centuries of Wars and Revolutions", Presses Universitaires de France,1976, 224 pp.

Brody, Richard A., "Some Systemic Effects of the Spread of Nuclear Weapons Technology: A Study Through Simulation of a Multinuclear Future", Journal of Conflict Resolution, Vol. VII, No. 4, December 1963, pp. 663-753.

Bronfenner, Urie, "The Mirror Image in Soviet-American Relations: A Social Psychologist's Report", Journal of Social Issues, Vol. 17, No. 3, 1961, pp. 45-56.

Burton, John W., "Conflict and Communication: The Use of Controlled Communication in International Relations", Macmillan, London, 1969, 246 pp.

Butterworth, Robert Lyle; and Scranton, Margaret E., "Managing Inter-State Conflict, 1945-1974: Data with Synopses", University of Pittsburgh Press, 1976, 535 pp.

Canadian Institute of International Affairs Working Group (Robert Reford, Chairman), "The Other Road to Security: Canada and Disarmament", CIIA, Toronto, June 1982, 32 pp.

Cantril, Hadley, "The Pattern of Human Concerns", Rutgers University Press, 1965.

Caplow, Theodore, "Two Against One: Coalitions in Triads", Prentice-Hall, London, 1969, 183 pp.

Clark, Grenville; and Sohn, Louis B., "World Peace Through World Law", Harvard University Press, 1958, 525 pp.

Claude, Inis L., Jr., "Swords Into Plowshares", Random House, New York, 1959.

Close, Patricia M., "The Principle of Uncertainty as an Integrative Concept in International Crisis Research", International Interactions, Vol. 5, No. 4, 1979, pp. 331-350.

Crawford, A.; Cleminson, F.R.; Grant, D.A.; and Gilman, E., "Compendium of Arms Control Verification Proposals", (Second Edition), Operational Research and Analysis Establishment (ORAE), Dept. of National Defence, Ottawa, Canada, March 1982, 485 pp.

Crow, Wayman J., "A Study of Strategic Doctrines Using the Inter-Nation Simulation", Journal of Conflict Resolution, Vol. VII, No. 3, September 1963, pp. 508-589.

Dedring, Jürgen, "Recent Advances in Peace and Conflict Research: A Critical Survey", (A UNITAR Study), Sage Publications, Beverly Hills, Calif., 1976, 249 pp.

Delgado, Jose, "Physical Control of the Mind: Toward a Psycho-civilized Society", Harper and Row, New York, 1971.

Dencik, Lars, "Peace Research: Pacification or Revolution?", Paper, International Peace Research Association, Karlovy Vary, Czechoslovakia, Sept. 1969, Mimeo, 20 pp.

Denton, Frank, "Some Regularities in International Conflict, 1920-1949", Background*, Vol. 9, No. 4, pp. 283-296, 1966.
* Later International Studies Quarterly.

Deutsch, Karl W., "Political Community at the International Level", Random House or Doubleday, 1954.

Deutsch, Karl W., "Security Communities", In James N. Rosenau (ed.) "International Politics and Foreign Policy", Free Press of Glencoe, 1961, pp. 98-105.

Doob, Leonard W. (ed.), "Resolving Conflict in Africa: The Fermeda Workshop", Yale University Press, New Haven, 1970, 209 pp.

East, Maurice; Hermann, Margaret G.; Hermann, Charles F., "CREON Phase I: A Final Report to the National Science Foundation", CREON Report from University of Kentucky and Ohio State University, Autumn 1976.

Eckhardt, William, "Ideology and Personality in Social Attitudes", Peace Research Reviews, Vol. 3, No. 2, 1969, 106 pp.

Eckhardt, William, "Compassion: Toward a Science of Values", CPRI Press, Oakville, Ontario, 1972, 312 pp.

Eckhardt, William, "A Conformity Theory of Aggression", Journal of Peace Research, Vol. X, 1974, pp. 31-39.

Eckhardt, William; and Young, Christopher, "Governments Under Fire", Human Relations Area Files Press, 1977, 379 pp.

Eckhardt, William, "Atrocities, Civilizations, and Savages", Peace Research Laboratory, St. Louis, 15 pp. (Mimeo), Paper for International Conference on the Holocaust and Genocide, Tel Aviv, Israel, June 20-24, 1982.

Eckstein, Harry, "The Incidence of Internal Wars, 1946-1959", Appendix I of "Internal War: The Problem of Anticipation", report submitted to Research Group in Psychology and the Social Sciences, Smithsonian Institution, Washington, D.C., January 15, 1962.

Etzioni, Amitai, "The Dialectics of Supranational Unification", American Political Science Review, Dec. 1962 (a)

Etzioni, Amitai, "A Paradigm for the Study of Political Unification", World Politics, October 1962 (b)

Etzioni, Amitai, "The Epigenesis of Political Community at the International Level", American Journal of Sociology, January 1963.

Etzioni, Amitai, "Strategic Models for a Depolarizing World", Journal of Peace Research, 1965, No. 2.

Etzioni, Amitai, "The Kennedy Experiment", (Part I), Western Political Quarterly, Vol. 20, No. 2, June 1967, pp. 361-380.

Etzioni, Amitai, "The Kennedy Experiment", (Part II), Psychology Today, December 1969, pp. 43-45 and 62-63.

Etzioni, Minerva, "The Majority of One: Toward a Theory of Regional Compatibility", Sage Publ., Beverly Hills, Calif., 1970.

Falk, Richard A., "A Study of Future Worlds", Free Press, 1975, 506 pp.

Feierabend, Ivo K. and Rosalind L., "Aggressive Behaviors Within Politics, 1948-1962: A Cross-National Study", Journal of Conflict Resolution, Vol. 10, 1966, pp. 249-271.

Feierabend, Ivo K.; Feierabend, Rosalind L.; and Gurr, Ted R. (editors), "Anger, Violence, and Politics: Theories and Research", Prentice-Hall, Toronto, 1972.

Festinger, Leon, "The Theory of Cognitive Dissonance", Row, Peterson; Evanston, Ill., 1957.

Festinger, Leon, "Cognitive Dissonance", Scientific American, October 1962, pp. 93-102.

Forrester, Jay W., "World Dynamics", Wright-Allen Press, Cambridge, Mass., 1971, 142 pp.

Galtung, Johan, "Peace Theory: (1) On the Meaning of 'Peace' and 'Violence'. (2) Some Perspectives from the Theories of Conflict, Peace and Development", Reprinted by Student Forum, 1865 Broadway, New York, 10023, Mimeo, 28 pp. Undated.

Galtung, Johan, "A Structural Theory of Aggression", Journal of Peace Research, 1964, No. 2, pp. 95-114. (1964 (a)).

Galtung, Johan, "Foreign Policy Opinion as a Function of Social Position", Journal of Peace Research, 1964, No. 3/4, pp. 206-231. (1964 (b)).

Galtung, Johan, "Two Approaches to Disarmament: The Legalist and the Structuralist", Journal of Peace Research, 1967, No. 2, pp. 161-195.

Galtung, Johan, "Violence, Peace, and Peace Research", Journal of Peace Research, 1969, No. 3, pp. 167-191. (1969 (a)).

Galtung, Johan, "Feudalism, Structural Violence, and the Structural Theory of Revolution", Paper, International Peace Research Association, Karlovy Vary, Czechoslovakia, Sept. 1969, Mimeo, 46 pp. (1969 (b)).

Galtung, Johan, "A Structural Theory of Imperialism", Journal of Peace Research, 1971, No. 2, pp. 81-117.

Galtung, Johan; and Hoivik, T., "Structural and Direct Violence: A Note on Operationalization", Journal of Peace Research, Vol. 8, No. 1, 1971, pp. 73-76.

Galtung, Johan, "Peace Research: Past Experiences and Future Perspectives", Chapter 2, pp. 13-34, in "Peace Research for Peace Action", Gandhi Peace Foundation and Gandhian Institute of Studies, A.K. Bose, New Delhi, India, 1972. (1972 (a)).

Galtung, Johan, "Peace Research Takes Sides", Peace News, January 21, 1972, pp. 2-3. (1972 (b)).

Galtung, Johan, "Is Peace Possible?", Address, Seminar on "The Role of Research in International Peace and Justice", St. Louis University, May 5, 1973.

Galtung, Johan, "A Structural Theory of Revolution", Rotterdam University Press, 1974, 140 pp.

Galtung, Johan, "A Structural Theory of Integration", Journal of Peace Research, 1968, No. 4, pp. 375-395.

Galtung, Johan, "The Specific Contribution of Peace Research to the Study of the Causes of Violence: Typologies", Interdisciplinary Expert Meeting on the Study of the Causes of Violence, UNESCO, Paris, November 12-15, 1975, 19 pp.

Galtung, Johan, "Implementing Self-Reliance", Transnational Perspectives, Vol. 3, No. 3/4, 1976, pp. 18-24.

Galtung, Johan, "The True Worlds" A Transnational Perspective, Free Press, 1979.

Galtung, Johan, "Alternatives to the Nuclear Madness", Keynote address to Nuclear Awareness Program, Holy Blossom Temple, Toronto, Jan. 16, 1983.

Gareau, Frederic H., "Cold War Cleavages as Seen from the U.N. General Assembly, 1947-1967", Journal of Politics, November 1970, pp. 929-968.

Guetzkow, Harold; Alger, C.; Brody, R.; Noel, R.; and Snyder, R.C., "Simulation in International Relations Developments for Research and Teaching", Prentice-Hall, Englewood Cliffs, N.J., 1963.

Haas, Ernest B., "International Integration: The European and the Universal Process", International Organization, Summer 1961, pp. 336-393.

Haas, Michael. "Societal Approaches to the Study of War", Journal of Peace Research, 1965, No. 4, pp. 307-321.

Heider, F., "The Psychology of Interpersonal Relations", Wiley, New York, 1958.

Hermann, Charles F.; and Hermann Margaret G., "The Potential Use of Historical Data for Validation Studies of the Inter-Nation Simulation: The Outbreak of World War I as an Illustration", Northwestern University, Evanston, Illinois, August, 1962, Mimeo, 92 pp.

Hermann, Charles F., "Crises in Foreign Policy Making: A Simulation in International Politics", Project Michelson, China Lake, California, U.S. Naval Ordnance Test Station, 1965, 319 pp.

Hermann, Charles F., "Crises in Foreign Policy: A Simulation Analysis", Bobbs-Merrill, Indianapolis and New York, 1969, 234 pp.

Hermann, Charles F.; East, Maurice; Hermann, Margaret; Salmore, Barbara; and Salmore, Stephen, "CREON: A Foreign Events Data Set", Sage Professional Papers in International Studies, 1974, 108 pp.

Holsti, Ole R., "Perception of Time, Perceptions of Alternatives, and Patterns of Communication as Factors in Crisis Decision-Making", Peace Research Society (International) Papers, (Chicago Conference 1964), Vol. III, 1965.

Howard, Nigel, "Paradoxes of Rationality: Theory of Metagames and Political Behaviour", MIT Press, Cambridge, Mass., 1971, 248 pp.

International Peace Research Association (IPRA) Disarmament Study Group, "Recommendations to the U.N. Special Session on Disarmament", Bulletin of Peace Proposals, 1978, No. 2, pp. 156-169, cf. also ibid, pp. 170-182.

Jacobsen, Kurt, "Some Aspects of U.N. Voting Patterns", Proceedings of International Peace Research Association, Second Conference, Vol. 1, 1968, pp. 315-346.

Johansen, Robert C., "Toward an Alternative Security System", World Policy Paper No. 24, World Policy Institute, New York, 1983, 57 pp.

Kaldor, Mary, Address to Sandefjord Conference on Disarmament and Development, Norway, May 6-7, 1980, The Sandefjord Report on Disarmament and Development, pp. 45-53.

Kaplan, Morton, "System and Process in International Politics", Wiley, New York, 1957, new ed. 1964, 315 pp.

Kelman, Herbert C., "An Interactional Approach to Conflict Resolution and Its Application to Israeli-Palestinian Relations", International Interactions, Vol. 6, No. 2, 1979, pp. 99-122.

Kende, Istvan, "Twenty-five Years of Local Wars", Journal of Peace Research, No. 1, 1971, pp. 5-22.

Kende, Istvan, "Wars of Ten Years, 1967-1976", Journal of Peace Research, Vol. 15, No. 3, 1978, pp. 227-241.

Kennan, George, "A Proposal for International Disarmament", (acceptance address of 1981 Einstein Peace Prize), World Policy Institute, 1981, 4 pp.

Keohane, Robert O., "Political Influence in the General Assembly", International Conciliacion, March 1966, 64 pp.

Keohane, Robert O., "The Study of Political Influence in the General Assembly", International Organization, Spring 1967, pp. 221-237.

Keyes, Gene; and Seymour, Scott, "The Sahara Forest and Other Superordinate Goals", Peace Research Reviews, Vol. VI, No. 3, 1975, 62 pp.

Klaassen, Walter, "The Just War: A Summary", Peace Research Reviews, Vol. VII, No. 6, Sept. 1978, 70 pp.

Knottenbelt, M.J., "The Forbidden Subject", Aizen World (Sri Lanka), Vol. II, No. 4, May 1983, p. 21.

Kohlberg, Lawrence, "Collected Papers on Moral Development and Moral Education", Harvard University Press, Cambridge, Mass., 1973.

Köhler, Gernot, "A Structural-Dynamic Theory of Armament", Paper, Canadian Peace Research and Education Association, Univ. of Alberta, Edmonton, May 31-June 2, 1975.

Köhler, Gernot; and Alcock, Norman, "An Empirical Table of Structural Violence", Journal of Peace Research, 1976, pp. 343-356.

Kothari, Rajni, "Footsteps Into the Future", Free Press, 1975, 173 pp.

Laborit, Henri, "The Biological and Sociological Mechanisms of Aggression", International Social Science Journal, Vol. 30, No. 4, 1978, pp. 727-749.

Lagos, Gustavo; and Godoy, Horatio H., "Revolution of Being: A Latin American View of the Future", Free Press. 1977.

Lande, Gabriella R., "The Effects of the Resolutions of the U.N. General Assembly", World Politics, Oct. 1966, pp. 83-105.

Larsen, Knud, "Aggression and Social Cost", Peace Research Reviews, Vol. V, No. 1, January 1973, 104 pp.

Leitenberg, Milton, "Military Research and Development: The Driving Force Behind Armaments", Bulletin of Peace Proposals, 1978, No. 1, pp. 75-79.

Leontieff, Wassily; and Duchin, Faye, "Military Spending: Facts and Figures, Worldwide Implications and Future Outlook", Oxford University Press, New York and Oxford, 1983, 124 pp.

Lorenz, Konrad, "On Aggression", Methuen (or Harcourt and Brace) 1966.

Manno, Catherine S., "Majority Decisions and Minority Responses in the U.N. General Assembly", Journal of Conflict Resolution, March 1966, pp. 1-20.

Marchand, Guy, "Mundialist Summa", Vol. I, "One World of Reason" (English version), Club Humaniste, Paris, 1977, 150 pp.

Mazrui, Ali A., "A World Federation of Cultures: An African Perspective", Free Press, 1976, 508 pp.

McClelland, Charles, "The World Event/Interaction Survey: A Research Project on Theory and Measurement of International Interaction and Transaction", University of Southern California, 1967, Mimeo.

McCormick, James M., "Evaluating Models of Crisis Behavior: Some Evidence from the Middle East", International Studies Quarterly, Vol. 19, No. 1, March 1975, pp. 17-45.

McGuinness, Diane (University of California at Santa Cruz) "Alternatives to Aggression", Paper at International Conference on the Unity of Sciences, Miami Beach, Nov. 27-30, 1980.

Meadows, Donella H.; Meadows, Dennis L.; Randers, Jørgen; Behrens, William W. III, "The Limits to Growth", Potomac Associates, Washington, D.C., 1972.

Melko, Matthew, "52 Peaceful Societies", CPRI Press, Oakville, Ontario, 1973, 223 pp. Also "Peace in the Ancient World", McFarland, Jefferson, N.C., 1981, 223 pp.

Melman, Seymour, "Pentagon Capitalism: The Political Economy of War", McGraw-Hill, New York, 1970, 290 pp.

Melman, Seymour, "The Permanent War Economy: American Capitalism in Decline", Simon and Schuster, New York, 1974.

Mendlovitz, Saul H., "On the Creation of a Just World Order", Free Press, 1975, 302 pp.

Milgram, Stanley, "Obedience to Authority", Harper and Row, 1973.

Milstein, Jeffrey S.; and Mitchell, William C., "Dynamics of the Vietnam Conflict: A Quantitative Analysis and Predictive Computer Simulation", Peace Research Society (International) Papers, (Cambridge 1968 Conference), Vol. X, 1968, pp. 163-195.

Mische, Gerald, and Patricia, "Toward a Human World Order: Beyond the National Security Stait-jacket", Paulist Press, 19??

Mitrany, David, "A Working Peace System", Quadrangle Books, 1966.

Modelski, George; and Thompson, William R., "Further Testing of Cobweb Models of the Long Cycle of World Leadership", Paper to Peace Science Society (International), Philadelphia, Nov. 9-11, 1981.

Morgenthau, Hans, "Politics Among Nations", 3rd edition, Knopf, New York, 1960.

Naidu, M.V., "Collective Security and the United Nations", Macmillan of India, Delhi, 1974, 164 pp.

Newcombe,Alan and Hanna, "A World Peace Makers Association of Nations", Peace Research Institute, Dundas, 19??, 13 pp.

Newcombe, Alan, "Initiatives and Responses in Foreign Policy", Peace Research Reviews, Vol. III, No. 3, June 1969, 123 pp.

Newcombe, Alan; and Wert, James, "An Inter-Nation Tensiometer for the Prediction of War", Peace Research Institute, Dundas, 1972, 326 pp.

Newcombe, Alan G.; Newcombe, Nora S.; and Landurs, Gary A.,"The Development of an Internation Tensiometer", International Interactions, Vol. I, Jan. 1974, pp. 3-18.

Newcombe, Alan G.; Dumas, Lloyd J.; et al., "Economic Consequences of Armaments", Peace Research Reviews, Vol. VII, No. 3, Nov. 1977, 88 pp.

Newcombe Alan; and Klaassen, Frank, "The Tensiometer Prediction of Nations Likely to be Involved in International War in the Years 1977-1980", Korean Institute of International Studies, Vol. 10, No. 1, 1978-79, pp. 1-43. (1978 (a)).

Newcombe, Alan, "Some Contributions of the Behavioural Sciences to the Study of Violence", International Social Science Journal, Vol. 30, No. 4, 1978, pp. 750-775 (1978 (b)).

Newcombe, Alan, "Lovemate: A Personal and International Foreign Policy for Peace", In "Strategies Against Violence: Design for Nonviolent Change", edited by Israel Charny, Westview Press, Boulder, Colorado, 1978, pp. 3-17. (1978 (c)).

Newcombe, Alan (editor), "GRIT I and II", Peace Research Reviews, Vol. 8, No. 1 and 2, January and February 1979, 89 pp. and 104 pp.

Newcombe, Alan and Hanna, "The Fuse: Chain of Nations in Tension", Bulletin of Peace Proposals, No. 2, 1980, pp. 124-130. Also International Interactions, Vol. 7, No. 1, 1980, pp. 1-32. (different version, same title).

Newcombe, Alan, "A World Peace-Makers Association of Nations", Peace Research Institute, Dundas, February 1983, 17 pp.

Newcombe, Hanna, "Alternative Approaches to World Government", Peace Research Reviews, Vol. I, No. 1, April 1967, 84 pp.

Newcombe, Hanna and Alan, "Peace Research Around the World" CPRI Press, Oakville, 1969, 275 pp.

Newcombe, Hanna, "National Patterns in International Organizations", Peace Research Reviews, Vol. 6, No. 4,5, and 6, 1975, total 367 pp.

Newcombe, Hanna; Schopen, Lynn; Wert, James; and Young, Christopher, "Nations on Record: U.N. General Assembly Roll-call votes, 1946-1973", Peace Research Institute, Dundas, 1975, 534 pp. First supplement (1974-1977) by Newcombe, Hanna; Litster, Joyce; Snider, Kate; and Stortroen, Katie, PRID, 1981, 137 pp.

Newcombe, Hanna, "Alternative Approaches to World Government II", Peace Research Reviews, Vol. V, No. 3, February 1974, 94 pp

Newcombe, Hanna, "Escape from the Dilemma", Peace Research, Vol. 9, No. 1, January 1977, pp. 51-59. (1977 (a)).

Newcombe, Hanna, "Some Thoughts on Triadic Networks of Nations", Paper, Canadian Peace Research and Education Association, University of New Brunswick, Fredericton, N.B., June 1977, Mimeo, 16 pp. (1977 (b)).

Newcombe, Hanna, "Reform of the U.N. Security Council", Peace Research Reviews, Vol. VIII, No. 3, May 1979, 104 pp.

Newcombe, Hanna; and Köhler, Gernot, "The Balance of Peace: Predicting International Friendship and Hostility from Cognitive Balance Triangles", In "Peace and Violence: Quantitative Studies in International and Civil Conflict", edited by Anita Kemp, HRA Flex Books, Human Relations Area Files, 1980, pp. 109-140, (1980 (a)).

Newcombe, Hanna (compiler), "World Unification Plans and Analyses", Peace Research Institute, Dundas, 1980, 259 pp. (1980 (b)).

Newcombe, Hanna; and Allett, John, "Nations in Groups (II): Typol Analyses of Roll-call Votes in the U.N. General Assembly", Peace Research Institute, Dundas, 1981, 155 pp. First supplement (1974-77) by Newcombe, Hanna; PRID, 1981, 29 pp.

Newcombe, Hanna, "Approaches to a Nuclear-Free Future", Peace Research Reviews, Vol. IX, No. 2, May 1982, 98 pp. and No. 3, 108 pp.

Newcombe, Hanna, "Design for a Better World", University Press of America, Lanham - New York - London, 1983, 362 pp.

Newcombe, Hanna; and Mahoney, Terry, "Alternative Pasts: U.N. Roll call Votes Under Weighted Voting", Peace Research Institute, Dundas, 1983, 513 pp.

North, Robert C.; Brody, Richard A.; and Holsti, Ole R., "Some Empirical Data on the Conflict Spirals", Peace Research Society International (Papers), Vol. I, 1964, Chicago Conference 1963, pp. 1-14.

Osgood, Charles E., "The GRIT Proposal for Ending the Arms Race", Summary of paper prepared for the International Congress of Applied Psychology, Copenhagen, August 13, 1961, Mimeo, 6 pp.

Osgood, Charles, "Alternative to War and Surrender", University of Illinois Press, Urbana, 1962, 183 pp.

Osgood, Charles, "Exploration in Semantic Space: A Personal Diary", Journal of Social Issues, Vol. 27, No. 4, 1971, pp. 5-64.

Pratt, Richard; and Rummel, Rudolph J., "Issue Dimensions in the 1963 U.N. General Assembly", Multivariate Behavioral Research, April 1971, pp. 251-286.

Ramsey, Paul, "The Just War: Force and Political Responsibility", Scribner's, New York, 1968.

Rapoport, Anatol, "Fights, Games and Debates", University of Michigan Press, Ann Arbor, 1960, 400 pp.

Rapoport, Anatol; and Chammah, Albert M., "Prisoner's Dilemma, a Study in Conflict and Co-operation", University of Michigan Press, 1965, 258 pp.

Rapoport, Anatol; and Guyer, Melvin, "A Taxonomy of 2 x 2 Games", Peace Research Society (International) Papers, (Sept. 1966 Vienna Conference), Vol. VI, 1966, pp. 11-26.

Rapoport, Anatol, "Games Which Simulate Deterrence and Disarmament", Peace Research Reviews, Vol. I, No. 4, August 1967, 79 pp.

Raser, John R.; and Crow, Wayman J., "Winsafe II: An Inter-Nation Simulation Study of Deterrence Postures Embodying Capacity to Delay Response", Western Behavioral Sciences Institute, La Jolla, California, July 1964, 102 pp.

Richardson, Lewis F., "Arms and Insecurity", Quadrangle Books, Chicago, 1960 (a).

Richardson, Lewis F., "Statistics of Deadly Quarrels", Quadrangle Books, Chicago, 1960 (b).

Roberts, John, "25 Years to a Governed World", Association of World Federalists, London, 1975, 15 pp.

Rokeach, Milton, "The Nature of Human Values", Free Press, New York, 1973.

Rosenbluth, Gideon, "The Canadian Economy and Disarmament", Macmillan of Canada, Toronto, 1967, 189 pp.

Rowe, Edward T., "Changing Patterns in the Voting Success of Member States in the U.N. General Assembly: 1945-1966", International Organization, Spring 1969, pp. 231-253.

Rummel, Rudolph J., "Dimension of Conflict Behavior Within and Between Nations, 1955-1957", General Systems Yearbook, Vol. 8, 1963, 50 pp.

Rummel, Rudolph J., "Testing Some Possible Predictors of Conflict Behavior Within and Between Nations", Peace Research Society (International) Papers, Vol. I, 1964, pp. 79-111.

Rummel, Rudolph J., "Dimensions of Conflict Behavior Within Nations, 1946-1959", Journal of Conflict Resolution, Vol. 10, March 1966, pp. 65-73. (1966 (a)).

Rummel, Rudolph J., "Some Dimensions in the Foreign Behavior of Nations", Journal of Peace Research, 1966, No. 3, pp. 201-224. (1966 (b)).

Rummel, Rudolph J., "The Dimensions of Nations", Sage Publ., Beverly Hills, Calif., Vol. I, 1972, 512 pp.

Rummel, Rudolph J., "Field Theory Evolving", Vol. II of "Dimensions of Nations", Series, Sage Publ., Beverly Hills, Calif., 1977, 536 pp.

Rummel, Rudolph J., "Understanding Conflict and War", 5 volumes, Sage Publ., from 1975 (Vol. I) to 1981 (Vol. 5). (About 300-350 pp. per volume).

Rummel, Rudolph J., "Libertarianism and International Violence", Journal of Conflict Resolution, Vol. 27, No. 1, March 1983, pp. 27-72.

Russett, Bruce M., "Discovering Voting Groups in the United Nations", American Political Science Review, Vol. 60, No. 2, June 1966.

Russett, Bruce, "Causes of Peace", In "Alternative Methods for International Security", edited by Carolyn M. Stephenson, University Press of America, Washington, 1982, pp. 171-194.

Sakamoto, Yoshikazu and Falk, Richard (eds), "A World Demilitarized: A Basic Human Need", Alternatives, Winter 1980/81, No. 1-2.

Saltman, Juliet, "Economic Consequences of Disarmament", Peace Research Reviews, Vol. IV, No. 5, April 1972, 88 pp.

Sanger, Clyde, "Safe and Sound: Disarmament and Development in the Eighties", Deneau Publ., Ottawa, 1982, 122 pp.

Sawyer, Jack, "Dimensions of Nations: Size, Wealth, and Politics", American Journal of Sociology, September 1967, pp. 145-172.

Schell, Jonathan, "Fate of the Earth", Knopf, 1982, 231 pp.

Schmid, Herman, Peace Research and Politics", Journal of Peace Research, 1968, No. 3, pp. 217-232.

Schulze, Lothar, "The Basic Law of Creation and Rearmament", Eichenplan 1, 3000 Hannover 51, FR Germany, private printing, 8 pp., July 14, 1983. Translated from German by Hanna Newcombe, 25 Dundana Avenue, Dundas, Ontario, L9H 4E5.

Senghaas, Dieter, "Arms Race by Arms Control?", Bulletin of Peace Proposals, 1973, No. 4, pp. 359-374.

Senghaas, Dieter, "The Cycles of War and Peace", Bulletin of Peace Proposals, Vol. 14, No. 2, 1983, pp. 119-124.

Sharp, Gene, "The Politics of Nonviolent Action: An Encyclopedia of Method and Action", Pilgrim, Philadelphia, 1969, 896 pp.

Sharp, Gene, "Nonviolent Action as a Substitute for International War", Bulletin of Peace Proposals, 1978, No. 4, pp. 321-328.

Sharp, Gene, "Making the Abolition of War a Realistic Goal", (Winning essay in Wallach Contest). Peace Research Reviews, Vol. IX, No. 1, March 1982, pp. 3-24.

Sherif, Carolyn, "Social Networks and Social Communications", Peace Research Summer School, Carleton University, Ottawa, August 1978.

Sherif, Muzafer; Harvey, O.J.; White, B. Jack, Hood, William R.; and Sherif, Carolyn W., "Intergroup Conflict and Cooperation: The Robber's Cave Experiment", Institute of Group Relations, University of Oklahoma, Norman, 1961, 212 pp.

Sherif, Muzafer, "Creative Alternatives to a Deadly Showdown", Trans-Action, January 1964, pp. 3-7.

Sherif, Muzafer, "In Common Predicament: Social Psychology of Inter-Group Conflict and Cooperation", Houghton Mifflin, Boston, 1966, 192 pp.

Singer, J. David, "Threat Perception and the Armament-Tension Dilemma", Journal of Conflict Resolution, Vol. 2, 1958, pp. 90-105.

Singer, J. David; and Small, Melvin, "The Wages of War, 1816-1965: A Statistical Handbook", Wiley, New York, 1972 (a).

Singer, J. David, "Correlates of War", Paper, Canadian Peace Research and Education Association, McGill University, Montreal, June 3, 1972 (b).

Singer, J. David, "The Correlates of War Project: Interim Report and Rationale", World Politics, Vol. 24, January 1972, pp. 243-270.

Singer, J. David; and Deutsch, Karl W.; et al., "Correlates of War", Open Forum at International Studies Association, St. Louis, Mo., March 21, 1974.

Sivard, Ruth L., "Let Them Eat Bullets - A Statistical Portrait of World Militarism", Bulletin of Atomic Scientists, April 1975, pp. 6-10.

Sivard, Ruth L., "World Military and Social Expenditures", 1974, 1976, 1977, 1978, [illegible]79, 1980, World Priorities, Box 1003, Leesburg, Virginia.

Smoker, Paul, "Fear in the Arms Race: A Mathematical Study", Journal of Peace Research, Vol. 1, 1964, pp. 55-64.

Smoker, Paul, "A Preliminary Empirical Study of an International Integrative Subsystem", International Associations, Nov. 1965.

Smoker, Paul, "The Arms Race as an Open and Closed System", Northwestern University, Evanston, Illinois, July 1966, Ditto, 24 pp.

Smoker, Paul, "Nation State Escalation and International Integration", Journal of Peace Research, 1967, No. 1, pp. 61-75.

Smoker, Paul, "International Processes Simulation: A Man-Computer Model", Northwestern University, Evanston, Ill., 1968.

Smoker, Paul, "International Relations Simulations", Peace Research Reviews, Vol. III, No. 6, 1970, 84 pp.

Smoker, Paul; and Miall, Hugh, "The Arms Race 1952-68: A Seven-Nation Study", Paper to International Peace Research Association, Bled, Yugoslavia, October 1971 , Mimeo 15 pp.

Sohn, Louis B., "Disarmament and Arms Control by Territories", Bulletin of Atomic Scientists, April 1961, pp. 130-3.

Sohn, Louis B., "Progressive Zonal Inspection: Basic Issues", In: "Disarmament: Its Politics and Economics", edited by Seymour Melman, American Academy of Arts and Sciences, Boston, 1962, pp. 121-133. (1962 (a)).

Sohn, Louis B., "Zonal Disarmament and Inspection: Variations on a Theme", Bulletin of Atomic Scientists, September 1962. (1962 (b)).

Somerville, John, "Human Rights, Ethics, and Nuclear War", Peace Research, April 1982, pp. 1-4.

Sorokin, Pitirim, "Social and Cultural Dynamics", 4 volumes, Bedminster Press, New York, 1962, (first edition 1937), Vol. III, Ch. 9-14.

Stephenson, Carolyn M. (editor), "Alternative Methods for International Security", University Press of America, 1982, 243 pp.

Stockholm International Peace Research Institute (SIPRI), "World Yearbook of Armaments and Disarmament, 1968/69", Almqvist, Stockholm, or Humanities Press, New York, 1969-70.

Tanter, Raymond, "Dimensions of Conflict Behavior Within and Between Nations, 1958-1960", Northwestern University, Evanston, Ill., August 1964, 92 pp.

Tanter, Raymond, "Dimensions of Conflict Behavior Within and Between Nations", Journal of Conflict Resolution, Vol. 10, March 1966, pp. 41-64.

Taylor, Charles L.; and Hudson, Michael C., "World Handbook of Political and Social Indicators", Yale University Press, New Haven and London, 1972 (Second edition) 443 pp. (Revised every 10 years).

Tinker, Lorena Jeanne, (P.O. Box 703, Corpus Christi, TX 78403), "Attitude Formation and Attitude Change: Review of Literature Relevant to Peace", St. Louis Peace Research Laboratory, October 1982, Mimeo, 54 pp.

United Nations Office of Public Information, "Final Document of Assembly Session on Disarmament (23 May-1 July 1978)", Reprinted from U.N. Monthly Chronicle, June 1980, pp. 3-22.

Vincent, Jack E., "Predicting Voting Patterns in the General Assembly", American Political Science Review, Vol. 65, 1971, pp. 471-498.

Vincent, Jack E., "Attribute and Attribute - Distance Theories of International Behavior: An Overview", Florida Atlantic University, Mimeo, 46 pp., 1976.

Wallace, Michael D., "Arms Races and Escalation: Some New Evidence", Journal of Conflict Resolution, Vol. 23, No. 1, March 1979, pp. 3-16.

Wallace, Michael D., "Armaments and Escalation: Two Competing Hypotheses", paper, Canadian Peace Research and Education Association, University of Quebec at Montreal, June 2, 1980.

Walzer, Michael, "Just and Unjust Wars", Allen Lane, (Review in Observer, Jan. 21, 1979, p. 35).

Weston, Burns, "Nuclear Weapons versus International Law: A Contextual Reassessment", McGill Law Journal, July 1983, pp. 542-590.

White, Ralph, "Nobody Wanted War: Misperception in Vietnam and Other Wars", Doubleday, 1968, 347 pp.

Wolfson, Murray, "A Mathematical Model of the Cold War", Peace Research Society (International) Papers, Vol. IX, 1968 Cambridge Conference), pp. 107-123.

World Constituent Assembly, "Constitution for the Federation of Earth", (Adopted in June 1977 in Innsbruck, Austria). World Constitution and Parliament Association, Lakewood, Colorado, 1977, 55 pp.

Wright, Quincy, "A Study of War", 2 vols., University of Chicago Press, Chicago, 1942.

Wright, Quincy, "Legal Aspects of the U-2 Incident", American Journal of International Law, Vol. 54, p. 836, 1960.

Wright, Quincy, "Some Legal Aspects of the Berlin Crisis", American Journal of International Law, Vol. 55, p. 959, 1961.

Wright, Quincy, "Intervention and Cuba in 1961", Proceedings of the American Society of International Law, April 1961.

Wright, Quincy, "The Goa Incident", American Journal of International Law, Vol. 56, p. 617, 1962.

Wright, Quincy, "The Cuban Quarantine", American Journal of International Law, Vol. 57, p. 546, 1963.

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